Meridian Mail Reporter 2.0
User's Guide

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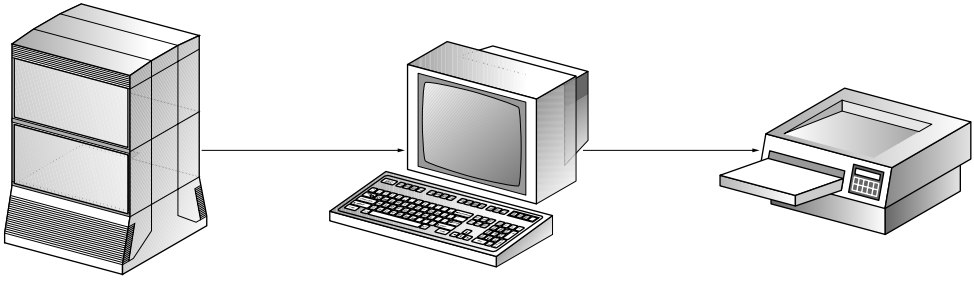
Chapter 1: Introducing MMR

Overview

Meridian Mail Reporter (MMR) is a PC software package developed to run under Microsoft Windows 3.1, Microsoft Windows NT, or Windows 95. MMR enables a Meridian Mail administrator to produce and print both summary and detailed reports for use in managing Meridian Mail systems. MMR uses periodic downloads of Operational Measurements (OM) files received from one or more Meridian Mail systems, and incorporates this information into a Microsoft Windows-based relational database on the PC.

Figure 1-1
Meridian Mail Reporter System



The administrator can easily produce and print the following information:

- Alert reports that notify you of critical problems that require immediate attention
- System Status reports used for troubleshooting hardware or software configuration problems, as well as providing capacity analysis information useful for balancing your system

- Traffic reports that provide information regarding busy hours for all, or individual, services
- Voice Mail reports that are used to analyze trends and usage of the messaging application of Meridian Mail
- User Information reports used to provide a directory of users and classes of service (COS)
- Networking reports used for analyzing network usage and for providing indicators of potential networking problems
- Outcalling reports used to analyze outcalling activity and for providing indicators of potential outcalling problems
- Multimedia Application Caller Analysis and Fax Delivery reports used for analyzing service activity for voice menus, announcements, and fax on demand
- Bill-Back files used for billing system usage back to the appropriate users and departments

Components of Meridian Mail Reporter

Meridian Mail Reporter consists of three main components: Setup, Communications, and Reports.

MMR Setup

MMR Setup is used for installing and configuring the MMR system on your computer. MMR Setup is invoked from the installation diskettes when you are doing a new installation or an upgrade (for example, from single site to multisite).

After installing MMR, you can use the MMR Setup program to add, delete, or change your system's site information. The MMR Setup installation process is discussed in detail in Chapter 3, "Installing MMR."

MMR Communications

MMR Communications is a stand-alone program that provides the interface between the Meridian Mail system and your computer. Once MMR is installed, this program starts automatically whenever Windows is started. MMR Communications runs in the background where it starts downloads according to the download schedule, activates MMR Reports to merge the download data, checks

alerts, and prints reports. Also, MMR Communications provides system monitoring capabilities such as displaying link status and recording all link activity in log files.

***Note*:** MMR Communications must always be active or automatic downloads and scheduled reports will fail to occur.

MMR Reports

MMR Reports allows you to view and manage alerts and reports. Both alerts and reports analyze performance metrics on the system's hardware, application, and security. However, alerts and reports are distinct: alerts have thresholds and reports have filters. Due to their thresholds, alerts indicate problems which need immediate attention. MMR tests for alert conditions after a download; when a predefined threshold is met or exceeded, an alert is triggered. Reports' filters allow you to set specific parameters for queries. As a result, you can define the scope of information that a report contains. In the main window of MMR Reports, alerts and reports appear in the Alert and Report palettes.

MMR Reports gives you the capabilities to view and print reports, customize the Alert and Report palettes, create a schedule for printing reports, and modify the download schedules of Operation Measurements.

These capabilities are explained in Chapter 4, "Using MMR and its Online Help," as well as in the online help provided with MMR.

In Chapters 5 through 12, you will find overviews of each report including

- field definitions
- an example of the report
- output sort keys
- analysis and corrective actions

These eight report chapters will be very useful for analyzing Meridian Mail usage patterns and for preventing potential problems.

Benefits of Using Meridian Mail Reporter

Meridian Mail Reporter provides an easier way of monitoring and maintaining your Meridian Mail system. The following are benefits that can be realized by using MMR.

Security

Computer hacker attacks on your Meridian Mail system can be disruptive and costly to your company. Toll fraud is one result of hacker activity on a telephone system. Toll fraud causes millions of dollars in losses each year.

Hackers use various means to try to gain access into phone systems. MMR provides reports that notify you of

- excessive unsuccessful login attempts that may be a result of brute force attacks on the system's mailboxes
- excessive after-hours logins that might occur if a hacker penetrates a mailbox
- excessive thru-dialer accesses that might occur if hackers are using a thru-dialer to make toll calls

The information provided in these reports helps in determining necessary corrective actions to prevent further hacker activity.

Convenience

During installation, MMR automatically creates a default download schedule so that no further configuration is required once the program is installed. MMR allows the administrator to modify the download schedule and to create a schedule for printing reports.

Flexibility

Because of its flexibility, MMR can do the following:

- Transfer OM files from any Meridian Mail system whether it is a 4-port Card Option on an Option 11 PBX, a 96-port Modular EC on an Option 81 PBX, or a 192-port MSM connected to an SL-100 PBX or DMS-100 central office. As well, the MMR PC and the Meridian Mail system can be located in different buildings or even in different cities because MMR can transfer OM files through a modem. Using a single PC, MMR also can collect OM files from several different Meridian Mail systems.

- Alert you of a critical problem on the Meridian Mail system which may require immediate attention.

- Offer a portfolio of 38 built-in management reports. They provide a broad spectrum of management information ranging from a simple directory of the mailboxes on a Meridian Mail system to a comprehensive analysis of every voice messaging and call answering session that took place on the system.

- Customize reports' sort orders and filter data. The contents of the management reports produced by MMR follow a certain sort order; however, you can create customized reports with different sort orders. The management reports are derived from all of the information stored in the database; however, you can filter the data in order to limit the scope of a report (for example, to a specific department).

- Follow a schedule for printing reports on a periodic basis (for example, daily).

- Export the information in any report to a variety of PC file formats including Microsoft Excel and Lotus 1-2-3. Also, using MMR, you can create a schedule for exporting reports into ASCII files on a periodic basis. You can incorporate these files into a centralized billing system.

- Provide you with context-sensitive online help during any operation.

Centralization

With MMR and Meridian Mail Releases 10 and 11, you can capture Operational Measurement (OM) data from multiple sites into one centralized database. This enables you to monitor and maintain several systems from one location. The number of systems from which you can collect data depends on the amount of data to be downloaded over the RS-232 link (it must be done within a 20-hour window) and the available disk space on the MMR PC. The volume of OM data determines the size of the MMR database.

Visual Information

Some of the reports can be displayed in graph format. Graphical format is useful for quick analysis of data allowing you to see trends in system use. With the System Traffic Summary report, for example, you can easily monitor the total amount of traffic processed by your site's Meridian Mail services. This graph allows you to identify the system's busy hour(s) and determine whether you have sufficient port capacity to handle the load.

Ability to Bill Service Usage

MMR Reports include a set of files that can be used to make billing of service usage much easier. The bill-back files are output as either reports or as ASCII text files. The ASCII text files can be used to feed data into an external bill-back program. Bill-back files are provided for Voice Mail, 1-800 Service, Outcalling, Networking, and Fax Outcalling services.

Historical information

MMR Reports can be scheduled to run on a daily, weekly, monthly, or on-demand basis. MMR can keep data for up to 180 days provided that your MMR PC has sufficient hard disk capacity.

Chapter 2: Getting Started

Introduction

This chapter explains what you need to know before you begin to install MMR. As well, you learn how to set up Meridian Mail so it can support MMR.

Background Information

Before beginning the installation of Meridian Mail Reporter (MMR), you need to know some important things. You should understand PC and DOS terminology and concepts. Make sure that you understand terms such as “filename,” “subdirectory,” and “drive.” If you do not have a firm grasp of this type of information, you may find installing and using MMR difficult.

You should also be familiar with the Windows environment. Also, understand concepts such as icons and clicking, and know how to print in the Windows environment.

For information on DOS, Windows, and the PC, refer to the documentation you received with your PC.

From a Meridian Mail perspective, you should have the *Maintenance Messages (SEERs) Reference Manual* (NTP 555-7001-501), and the *System Administration Manual* (NTP 555-7001-30x) available for help with problem determination.

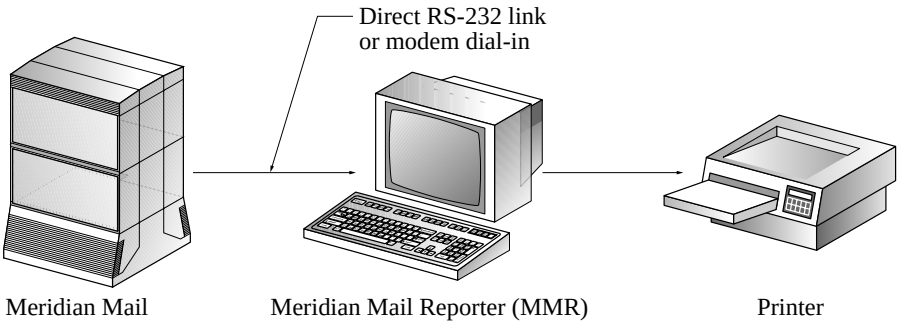
MMR Configuration

Meridian Mail Reporter is available in four configurations:

- single site Meridian Mail 10 and 11
- multisite Meridian Mail 10 and 11

The following diagrams show how MMR is configured with Meridian Mail (MM).

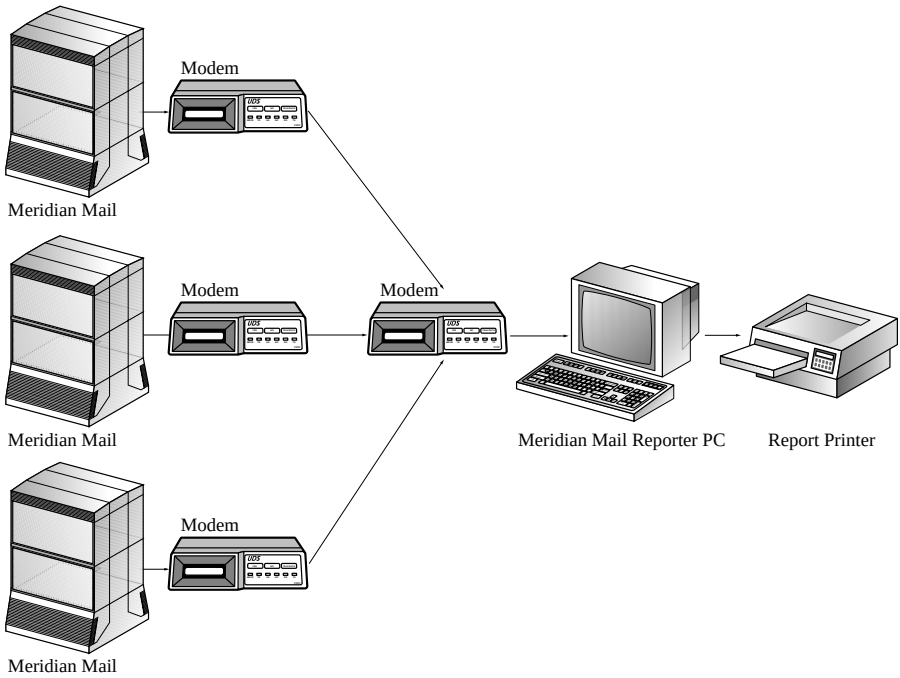
Figure 2-1
Single site configuration



***Note*:** The dataport is connected to either an RS-232 port on an RSM or Utility card or a Transition Module (on an MSM), or on an MMP40 card in one of the voice nodes.

The single site configuration connects to Meridian Mail on an AdminPlus dataport designated for Meridian Mail Reporter (MMR) use. This port is dedicated to Operational Measurements (OM) download and is configurable on any dataport except for those used by the AML link and console.

Figure 2-2
Multisite configuration



Note: The dataport is connected to either an RS-232 port on an RSM or Utility card or a Transition Module (on an MSM), or on an MMP40 card in one of the voice nodes.

The multisite configuration is designed for customers with several MM systems who want centralized reporting. Each Meridian Mail system must have an AdminPlus dataport with an attached modem. The number of MM systems supported in a multisite configuration is determined by the aggregate amount of OM data to be downloaded.

The number of ports on a Meridian Mail system determines the volume of OM data collected on a daily basis. The number of days that the data is kept on the PC determines the size of the MMR database. Therefore, the limits for a specific configuration will be limited by two factors (for details, refer to the “MMR Hardware and Software Requirements” section in this chapter):

- the available disk space on the MMR PC (since the volume of OM data and days stored determines the size of the MMR database)

- the aggregate time required to download the collected OM data on a daily basis over an RS-232 link (no more than 12 hours is recommended, but up to 20 hours is allowed)

Refer to the "Meridian Mail Configuration Information" section in the Appendix for tabular information on

- platforms supported
- ports
- modem connection
- the File Transfer features including platforms supported, Meridian Mail features, and serial port speeds

MMR Hardware and Software Requirements

Meridian Mail Reporter has certain hardware and software requirements to ensure that it runs efficiently. Make sure that your location's hardware and software meet or exceed the following minimum mandatory requirements.

Hardware

Your PC must have the following minimum hardware requirements to run MMR:

- a 486 DX2 CPU, 66MHz
  or
  a Pentium CPU, 90MHz is recommended for more than 12 Meridian Mail ports

- RAM
  — 8 Mbytes for Windows 3.1 (16 Mbytes is recommended for more than 16 Meridian Mail ports)
  12 Mbytes or Windows 95 (20 Mbytes is recommended for more than 16 Meridian Mail ports)
  — 16 Mbytes for Windows NT Client (24 Mbytes is recommended for more than 16 Meridian Mail ports)
  — 32 Mates for Windows NT Server (40 Mbytes is recommended for more than 16 Meridian Mail ports)

- a hard disk drive
  The space required to hold the MMR database is determined by the number of voice ports and the number of days your site will store the information in the

MMR database. MMR requires 550 Mbytes as the greatest amount of free disk space.

- one serial port (a serial card with 16550 UART required) for connection to Meridian Mail
- one modem for the MMR PC (U.S. Robotics 14.4 is recommended) and one modem for each Meridian Mail system for a multisite configuration
- a 3.5-inch floppy disk drive
- a VGA monitor
- a keyboard and a mouse

Optional Hardware

- one modem for the MMR PC and one modem for a Meridian Mail single site configuration

For sites that require hard copy reports

- a laser printer (recommended) with sufficient memory to produce graphical reports (for example for an HP LaserJet with at least 2 Mbytes of RAM are required). The printer can be connected directly to the PC or through a LAN.

Software

Your PC must have the following software packages installed to run MMR:

- MS-DOS Version 5.0 or later
- Microsoft Windows 3.1, Microsoft Windows 3.11, Microsoft Windows For Workgroups 3.11 running in 386 enhanced mode, Microsoft Windows NT 3.51, or Microsoft Windows 95

***Note*:** Dual-boot configurations (such as Microsoft Windows 3.1- Microsoft Windows NT, Microsoft Windows 3.1 - Microsoft Windows 95, Microsoft Windows 3.1 - OS/2), are not supported.

- an installed MS Windows printer driver

  The Print Preview function, which is used to view reports on the screen, requires the existence of an installed printer driver, even if the PC does not have access to a printer.

  ***Note*:** If you do not intend to print reports, then install the highest resolution driver provided on your system to ensure the highest quality output of the screens.

- SHARE (a utility that comes with DOS)
  Important: You require SHARE for use with only Windows 3.1 and Windows for Workgroups.

  SHARE is used by the Setup program to install MMR. To start the utility, exit from Windows (by selecting FILE/EXIT from Windows Program Manager). Once at the DOS prompt, type **SHARE** and press Enter to run SHARE. If SHARE is already installed, you will be notified by the proper message, but you can safely ignore the message. To restart Windows, type **WIN** at the DOS prompt and press Enter. Follow the normal procedure to install MMR.

  It is important to note that since the installation process needs SHARE to be loaded in memory before Windows is started, do not attempt to run a DOS instance (MS-DOS prompt) from within Windows in order to run SHARE. This will not work.

- a disk caching program (for example, SMARTDRV.EXE)
  Important: You require a disk caching program for use only with Windows 3.1 and Windows for Workgroups.

  This program is part of the MS-DOS package and can be activated by inserting the following line in the AUTOEXEC.BAT file:

  C:\DOS\SMARTDRV.EXE

  ***Note*:** The default installation of MS-DOS inserts the following line in the AUTOEXEC.BAT file:

  C:\DOS\SMARTDRV.EXE /X

  The /X switch (which disables write caching) should be removed since write caching provides a noticeable improvement in the performance of the merge process.

Virtual Memory Settings for Windows 3.1

The settings for virtual memory can be changed in Microsoft Windows 3.1 through the Control Panel, 386 Enhanced.

Make sure that, in the Virtual Memory dialog box, the following are disabled:

- Use 32-Bit Disk Access
- Use 32-Bit File Access (available in Windows For Workgroups only)

Failure to do this may result in disk access errors during the file conversion or merge process.

For maximum performance, it is recommended that the current settings for the swap file be set as Permanent.

Windows 3.1 Protection and Multitasking

Microsoft Windows 3.1 is not a true protected environment: it does not protect itself fully from misbehaving applications, nor does it protect the applications themselves from one another. As well, under Windows 3.1 you cannot multitask because a running application is not guaranteed CPU time at regular intervals.

As a major consequence of the low level of protection in Windows 3.1, when an application crashes with a General Protection Fault (GPF) error message or any other Windows fatal error, the integrity of the system cannot be guaranteed anymore. Under such circumstances, stop MMR immediately and terminate Windows; then, restart Windows which restarts MMR. If you do not terminate and restart Windows, all subsequent operation may encounter problems.

Because Windows 3.1 does not offer multitasking, MMR Communications is vulnerable to other applications holding the CPU for long periods of time. MMR Communications requires regular CPU time to download files from Meridian Mail. If MMR Communications is delayed, the communications link with Meridian Mail can terminate and cause a download in progress to fail. Consequently, you should not run other programs, even another MMR program, while MMR Communications downloads. For example, running reports, either scheduled or on demand, in MMR Reports during a download can cause that download to fail. Even using File Manager to copy between a floppy disk and the hard drive could cause the download to fail.

MMR is a complex application that creates a large database for each Meridian Mail site. Due to its complexity and the fact that Microsoft Windows 3.1 is not a protected environment, you should dedicate the PC running MMR to the MMR application.

Windows 95 and Windows NT Protection

The limitations described for Windows 3.1 also apply to any 16-bit applications other than MMR that you run under Windows 95 and NT. To use MMR under Windows 95 or Windows NT, follow these guidelines:

- run no 16-bit application other than MMR while it is downloading, merging, or generating reports
- run 32-bit applications as you want, for example in parallel with MMR downloading or reporting operations
- do not run reports, either scheduled or on demand, from MMR Reports while a download is in progress

MMR Package Contents

Before you begin installing Meridian Mail Reporter (MMR), make sure that you have received everything necessary for the installation, setup, and use of MMR. A complete package includes the following items:

Table 2-1
Meridian Mail Reporter package contents

Qty	Item
6	3.5-inch high-density disks
1	Meridian Mail Reporter User's Guide
1	Meridian Mail Reporter Quick Reference Card

If you have not received all of these items, call your distributor and ask him or her to ship the missing pieces immediately.

The six disks contain the installation program for the three components of MMR: MMR Setup, MMR Communications, and MMR Reports. Your disks support either

a single site configuration or a multisite configuration, but not both. The disks have the following labels:

- 1 disk - #1/6 Single Site, for a single site configuration
  or
  1 disk - #1/6 Multi Site, for a multisite configuration

- 5 disks - #2/6 to #6/6, for all configurations

Ensure that you have the disks for the correct configuration before beginning to install MMR.

Setting up Meridian Mail

For MMR 2.0 support, all Meridian Mail systems must run Release 10 or 11 and have the AdminPlus Enable option added before installation of MMR. AdminPlus Enable allows the Meridian Mail system to download OM data to MMR. AdminPlus Enable is added to a Meridian Mail system with a keycode and a feature expansion.

The following sections explain the main steps of converting to Meridian Mail 10 or performing a comprehensive upgrade to Meridian Mail 11. Another section provides procedures that expand on the main steps. Finally, the last section outlines where you can find cabling information.

Overview of Converting to Meridian Mail Release 10

Converting to Meridian Mail Release 10 involves the following main steps:

1. Convert to Meridian Mail 10.
   Converting to Meridian Mail 10 uninstalls AdminPlus Enable because the download function moves from the Administrative Console port to a data port.

2. Run a feature expansion to add the AdminPlus Enable option.

3. Update the Meridian Mail Operational Measurement options.

4. Set an AdminPlus password.

5. Reinstall the VT-x20 terminal and SEER printer, originally shipped with the Meridian Mail system off of the A/B box.

6. Install new cabling.

Where necessary, the section "Procedures for Converting to Meridian Mail Release 10 or 11" expands on these steps.

Overview of Converting to Meridian Mail Release 11

Converting to Meridian Mail Release 11 involves the following main steps:

1. Perform a comprehensive upgrade to Meridian Mail 11.

2. Assign a data port for the AdminPlus Enable option.

3. Update the Meridian Mail Operational Measurement options.

4. Set an AdminPlus password.

5. Reinstall the VT-x20 terminal and SEER printer, originally shipped with the Meridian Mail system off of the A/B box.

6. Install new cabling.

Where necessary, the section "Procedures for Converting to Meridian Mail Release 10 or 11" expands on these steps.

Procedures for Converting to Meridian Mail Release 10 or 11

The following procedures expand on the main steps for converting to Meridian Mail Release 10 or 11.

Procedure 2-1
To add the AdminPlus Enable option for Meridian Mail 10

1. Add the AdminPlus Enable option with a feature expansion.

On Meridian Mail 10 systems, the AdminPlus link installs on a data port of an MMP40, Utility, or RSM card. During the feature expansion, you can change each data port's assignment on the system.

2. Select a currently unassigned data port (follow bulleted instructions below) set to **PRTnnnn**, and change it to **ADMIN** for AdminPlus.

- To select a dataport for AdminPlus on an MMP40 card

For NT6P97AA Release 10 (EC platforms) of the MMP40 card, select Port 2. Choosing the second port prevents an interworking problem between Port 1 and the AdminPlus link. For a later vintage of MMP40, select either Port 1 or 2.

- To select a dataport for AdminPlus on a Mod Op EC system

For Mod Op EC systems on MM10.07, select only Port 2, 3, or 4 of a Utility Card with Modem (NT6P03AA A0391972). For systems on MM10.10 or later, select Port 1, 2, 3, or 4.

Note: You cannot configure the AdminPlus link on the second Utility card of a Mod Op EC system.

The selected dataport appears as **ADMNnnnn** in the hardware database.

Procedure 2-2
To assign a data port for the AdminPlus Enable option under Meridian Mail 11

Select a currently unassigned data port (follow bulleted instructions below) set to **PRTnnnn**, and change it to **ADMIN** for AdminPlus.

- To select a dataport for AdminPlus on an MMP40 card

For NT6P97AA Release 10 (EC platforms) of the MMP40 card, select Port 2. Choosing the second port prevents an interworking problem between Port 1 and the AdminPlus link. For a later vintage of MMP40, select either Port 1 or 2.

- To select a dataport for AdminPlus on a Mod Op EC system

Select any port on the first Utility card. You cannot configure the AdminPlus link on the second Utility card.

The selected dataport appears as **ADMNnnnn** in the hardware database.

Procedure 2-3
To update the Operational Measurements options

1. From Meridian Mail, access the Operational Measurements Options screen.

2. Set "Collect Traffic Data" to **Enabled**.

3. Set "Traffic Period Start (hh:mm)" to **1:00**.

Note: Setting Traffic Period Start at **1:00** causes Meridian Mail to collect traffic data 24 hours a day.

4. Set "Traffic Period End (hh:mm)" to **1:00**.

Note: Setting Traffic Period End at **1:00** causes Meridian Mail to collect traffic data 24 hours a day.

5. Set "Traffic Commit Interval" to **1:00**.

6. Set "Traffic Data Commit Interval" to **hourly**.

7. Set "Number of Days of Traffic Data stored" to **3** (or more).

8. Set "Collect User Usage/Session Trace Data" to **Enabled**.

9. Set "Number of days of User Usage Data stored" to **3** (or more).

10. Set "Collect Audit Trail Data" to **Enabled**.

11. Set "Number of days of Audit Data stored" to **3** (or more).

12. Set "Shutdown Audit Trail at Volume Full (%)" to **85%**.

13. Set "OM Collection Access Class" to **O** if Visit Messenger is installed.

Note: You must set the three Number of days fields to a minimum of three days.

Procedure 2-4
To set an AdminPlus password

1. From Meridian Mail's main menu, select General Administration.

2. Select Change AdminPlus password.

3. Type an alphanumeric password that contains a minimum of six characters.

Cabling Information

For information about cabling and configurations using modem connectivity, refer to Appendix A of this guide.

To connect an AdminPlus Link cable to a dataport for non-Card Option systems, see the "Installing, Cabling and Configuring Peripheral Devices" chapter of the *Meridian Mail Modular Option Installation and Maintenance Guide* (NTP 555-70x1-250). The x in the number's middle layer corresponds to the hardware platform: 7041 for Modular Option, 7051 for Modular Option GP, and 7061 Modular Option EC.

Chapter 3: Installing MMR

Introduction

This chapter describes how to install MMR and contains three main sections: Before Installation, Installing the Software, and After Installation.

Before Installation

Before you install Meridian Mail Reporter (MMR), take the time to review the previous two chapters in this guide if you have not already done so.

Chapter	Description
1 Introducing MMR	• provides an overview of the system
2 Getting Started	• lists PC concepts you should understand, what your MMR package includes, and hardware and software requirements • describes how to set up Meridian Mail (MM) so that it can communicate with MMR

Installation Disks

The Meridian Mail Reporter (MMR) installation disks contain a single installation application. During installation, the system software automatically copies and installs the MMR programs from the disks to your PC hard drive. You should make backup copies of the MMR installation disks before beginning the installation.

Online Instructions

The screen instructions lead you through all the necessary steps to properly install the system. If you require further information, you can access the online help by pressing F1 or clicking any Help button.

MMR Setup

The MMR Setup program is one of the three main components of MMR. MMR Setup is invoked during the installation process. You can also start the MMR Setup program after you complete the installation of MMR. During the initial installation from disks, the MMR Setup program allows you to

- define the Meridian Mail system(s) from which data is to be collected
- configure the serial port on the PC (from which data is downloaded)
- configure the number of days to store Operational Measurements (OMs) in the database
- configure the modem command strings (if a modem is being used)
- modify the start time of the Download Time Window (which defaults to 00:15 a.m.)

Configuration Options

- **Single site configuration:** MMR connects to one Meridian Mail system.
- **Multisite configuration:** MMR connects to one or more Meridian Mail system(s). The actual number of sites depends on your particular installation, and the amount of OM data to be downloaded and stored.

Refer to Chapter 2, "Getting Started," for more information on the Meridian Mail configuration. Refer to the Appendix for a list of the supported Meridian Mail platforms.

Installation Checklist

Make sure that you complete all the following checklist items before beginning the installation.

- ☐ Check that your PC hardware and software meets or exceeds minimum requirements. See Chapter 2 for the minimum requirements list.

- ☐ Verify the Meridian Mail system(s) is configured with AdminPlus Enable option. If you are unsure whether the option is installed, log on to the system's Admin Tools, and run the Display System Record tool. If the AdminPlus Enable option is not configured, contact your distributor and order a feature expansion. See Chapter 2 for instructions on how to configure this option.

- ☐ See that the MMR PC is connected correctly to the Meridian Mail system. Refer to the "Cabling requirements" section in Appendix A.

- ☐ Know the current configuration of the Meridian Mail system(s), local or remote dial-up numbers, and passwords. See "Changing the AdminPlus Password" in the General Administration chapter of the *System Administration Guide (*NTP 555-7001-30X) for information on establishing an AdminPlus download password), release number(s), number of ports, and approximate number of users.

- ☐ Obtain the MMR license serial number for software registration. The number appears in the license documentation accompanying the program and on the label of MMR Disk 1.

- ☐ Collect the appropriate manuals for reference during the installation.

- ☐ Ensure that the DOS utility SHARE is running only for Windows 3.1 and Windows for Workgroups before beginning the installation. To check, exit Windows, type **SHARE** at the DOS prompt, and press Enter. If SHARE is already running, you are notified by a message. To restart Windows, type **WIN** at the DOS prompt and press Enter.

  ***Note*:** You must exit Windows in order for this operation to work.

- ☐ Complete the following steps if you are upgrading from Meridian Mail Release 8 with MMR Release 1.0 or 1.01, to Meridian Mail Release 10 or 11 with MMR Release 2.0. You must make this change in MMR Setup of Release 1.0 or 1.01 before installing the MMR Release 2.0 software.

1. Select the Single Site MM10 option button.

2. In the Meridian Mail Systems table, in the OM Password column, type the OM download password.

   ***Note*:** If you upgrade to Meridian Mail Release 11, you must make a change in the Meridian Mail Systems table after installation of MMR Release 2.0 completes. In the table, in the Release column, type **11**.

☐ Complete the following steps if you are upgrading from MMR Release 1.0 or 1.01 to Release 2.0.

1. Backup the existing database.

2. In MMR Reports, on the Maintenance menu, click Repair.

The preceding steps ensure you have a backup copy of the database created with MMR Release 1.0 or 1.01.

☐ Make sure that Microsoft Windows is running.

☐ Have the six MMR disks ready for installation. Make a backup copy of the disks, and install MMR from the copy.

Installing the Software

If you have completed the checklist above, you are ready to install MMR. The following four procedures guide you through the installation process. To install MMR under Windows 95, start with Procedure 3-1. Start with Procedure 3-2 to install MMR under Windows 3.x, Windows NT, or Windows for Workgroups.

Procedure 3-1
To begin installing Meridian Mail Reporter under Windows 95

1. Insert MMR Disk 1 into the MMR PC's floppy drive.

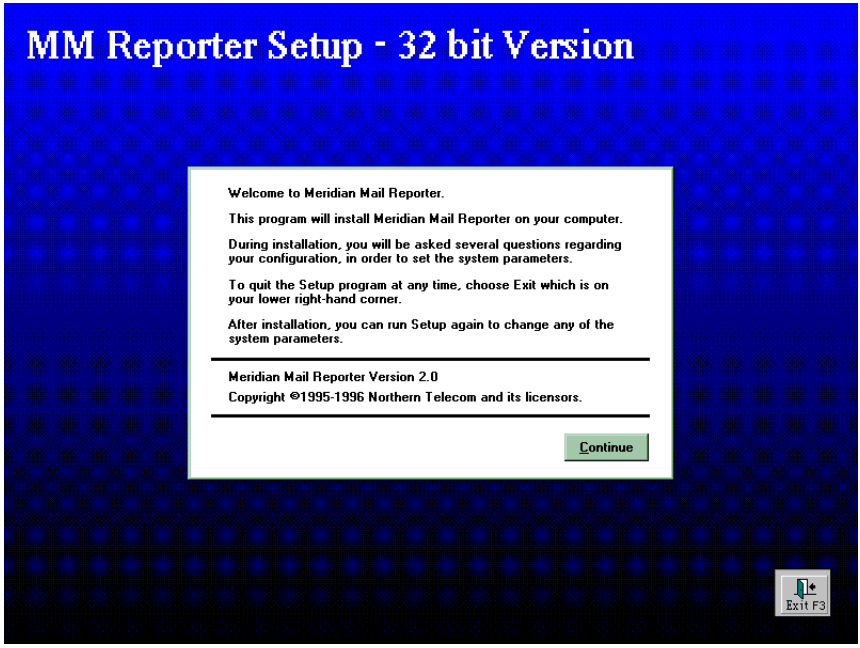
2. Click Start, and then click Run to open the Run dialog box.

3. Click the Open box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

4. Click OK.

The MMR Setup Welcome screen appears.

Figure 3-1
MMR Setup Welcome screen


MM Reporter Setup - 32 bit Version
Welcome to Meridian Mail Reporter.
This program will install Meridian Mail Reporter on your computer.
During installation, you will be asked several questions regarding your configuration, in order to set the system parameters.
To quit the Setup program at any time, choose Exit which is on your lower right-hand corner.
After installation, you can run Setup again to change any of the system parameters.
Meridian Mail Reporter Version 2.0
Copyright ©1995-1996 Northern Telecom and its licensors.
Continue
Exit F3

5. Click Continue.

The Password Registration screen appears.

Figure 3-2
Password Registration screen

Please enter a logon password.
This password will be used for all logon sessions in Meridian Mail Reporter.
Logon password:
*****
Continue

6. Click the Logon password box, and then type your password.

The password must contain at least 6 and no more than 16 characters. You require the password to log on to MMR, access configuration updates, and run reports.

If you enter a password that does not meet MMR requirements, you are prompted to try again. If you forget your password at any time, you can use the installation program to reset your password. Instructions are included in the online help and in this chapter.

7. Click Continue.

MMR Setup shows the Destination Drive screen, prompting you for the destination drive and providing c: as the default drive.

Figure 3-3
Destination Drive screen

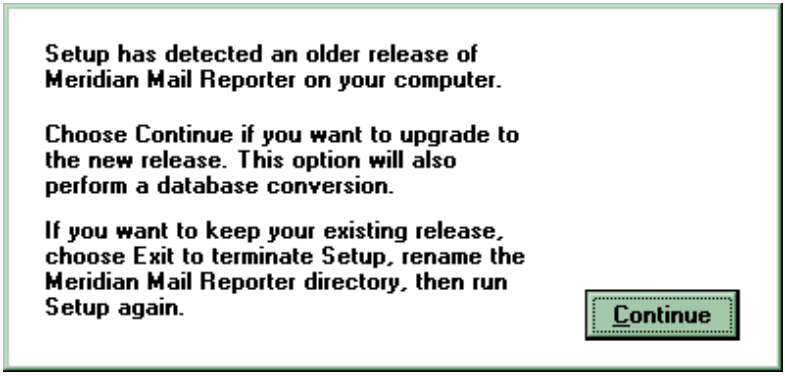
Note: The default directory is **\REPORTER** and cannot be changed.

8. If the default drive is inappropriate, from the Select Drive drop-down list, select another drive.

9. Click Continue.

If an older version of MMR exists on the hard drive, the Older Release screen appears, notifies you about the version, and prompts you to upgrade.

Figure 3-4
Older Release screen

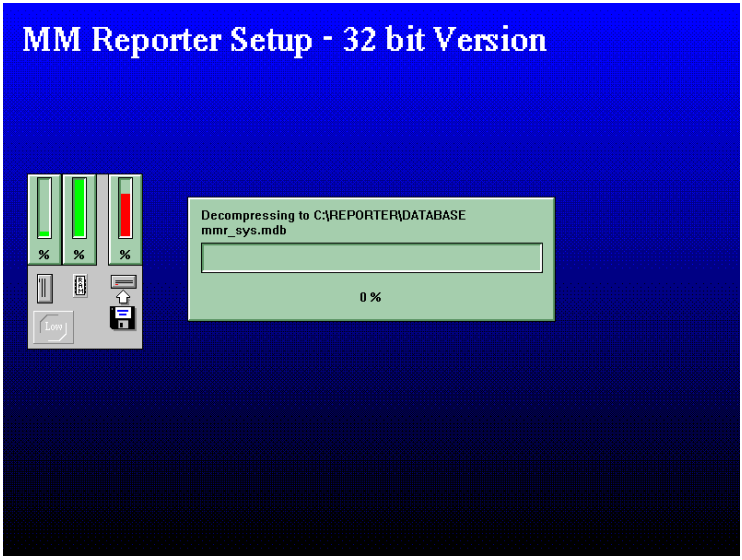

Setup has detected an older release of Meridian Mail Reporter on your computer.
Choose Continue if you want to upgrade to the new release. This option will also perform a database conversion.
If you want to keep your existing release, choose Exit to terminate Setup, rename the Meridian Mail Reporter directory, then run Setup again.
Continue

For upgrades only

Click Continue.

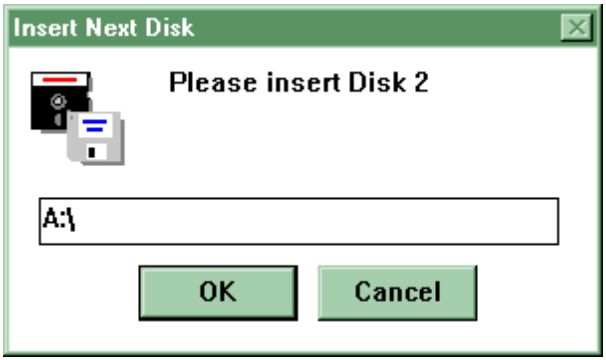
MMR Setup begins to copy files to the drive which you specified and shows the progress on a screen.

Figure 3-5
Copying MMR files to the hard drive



When MMR Setup completes copying all files from MMR Disk 1 to the PC, the program prompts you to enter the next disk as shown in the following example.

Figure 3-6
Insert Next Disk dialog box



10. Insert MMR Disk 2 into the floppy drive.

11. Click OK.

When MMR Setup completes copying all files from MMR Disk 2, the program prompts you to enter the next disk.

12. Insert MMR Disk 3 into the floppy drive.

13. Click OK.

After the files from MMR Disk 3 copy to the PC, MMR Setup opens so you can enter configuration information.

14. Go to Procedure 3-3, "To configure MMR Setup."

Procedure 3-2
To begin installing Meridian Mail Reporter under Windows 3.x, Windows NT, and Windows for Workgroups

1. Insert MMR Disk 1 into the MMR PC's floppy drive.

2. Double-click Program Manager.

3. On File, click Run to open the Run dialog box.

4. Click the Command Line box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

5. Click OK.

The MMR Setup Welcome screen appears.

6. Click Continue.

The Password Registration screen appears.

7. Click the Logon password box, and then type your password.

The password must contain at least 6 and no more than 16 characters. You require the password to log on to MMR, access configuration updates, and run reports.

If you enter a password that does not meet MMR requirements, you are prompted to try again. If you forget your password at any time, you can use the installation program to reset your password. Instructions are included in the online help and in this chapter.

8. Click Continue.

MMR Setup shows the Destination Drive screen, prompting you for the destination drive and providing c: as the default drive.

Note: The default directory is **\REPORTER** and cannot be changed.

9. If the default drive is inappropriate, from the Select Drive drop-down list, select another drive.

10. Click Continue.

If an older version of MMR exists on the hard drive, the Older Release screen appears, notifies you about the version, and prompts you to upgrade.

For upgrades only

Click Continue.

MMR Setup begins to copy files to the drive which you specified and shows the progress on a screen.

When MMR Setup completes copying all files from MMR Disk 1 to the PC, the program prompts you to enter the next disk.

11. Insert MMR Disk 2 into the floppy drive.

12. Click OK.

When MMR Setup completes copying all files from MMR Disk 2, the program prompts you to enter the next disk.

13. Insert MMR Disk 3 into the floppy drive.

14. Click OK.

After the files from MMR Disk 3 copy to the PC, MMR Setup opens so you can enter configuration information.

15. Go to Procedure 3-3, "To configure MMR Setup."

Procedure 3-3
To configure MMR Setup

In the Meridian Mail Reporter - Setup window, you enter system configuration information in order for MMR to interface with Meridian Mail. The following steps apply to a single site or multisite configuration. Also, you can use online help while completing the window.

1. Note that the Single Site or Multi Site radio button on your screen is preselected.

2. From the Port drop-down list, choose a serial port.

3. From the Speed drop-down list, select 2400, 4800, or 9600 (default) to set the baud rate (in bits per second) at which Meridian Mail will transmit data.

The speed of the Meridian Mail system governs the speed at which data transfers and, therefore, how long data takes to download into the database. For Meridian Mail data transfer speeds, refer to the table entitled "Platforms Supported, Features and Speeds (bps)" in Appendix A.

Figure 3-7
Single Site Meridian Mail Reporter - Setup window

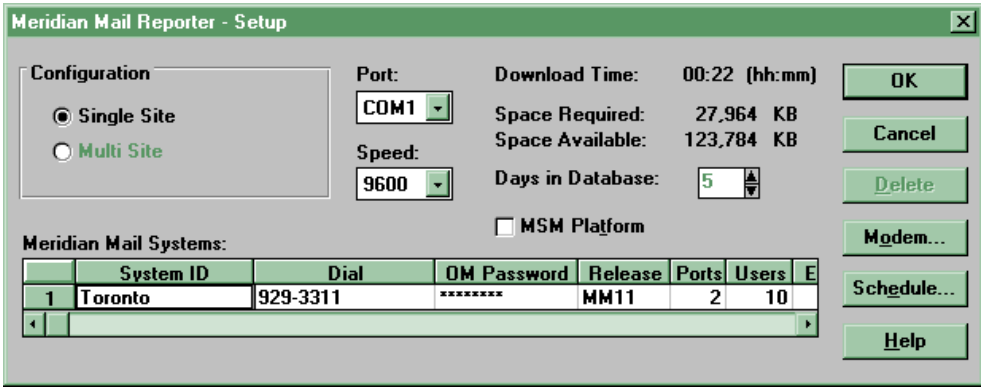
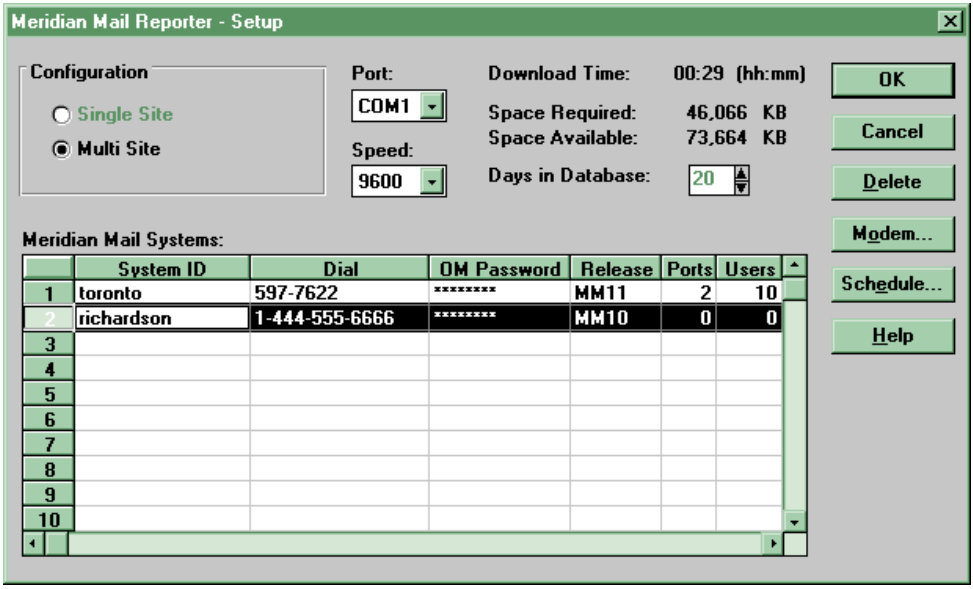


Figure 3-8
Multisite Meridian Mail Reporter - Setup window



4. From the Days in Database spin box, specify the number of days that MMR is to store data in the database.

The value can be between 5 and 180 days with the default being 35 days. When this limit is reached, MMR removes data older than the number of days specified in this box. Select a value based on the anticipated load on the Meridian Mail system and the amount of free hard disk space on your MMR PC.

5. For a single site configuration, if you have an MSM system, make sure the MSM Platform check box is checked.

6. Click the System ID column of the Meridian Mail Systems table, and then type the name of your Meridian Mail system.

The name cannot consist of more than 50 alphanumeric characters. Typically, you would enter the city or location of the site (for example, Toronto HQ). For a multisite configuration, enter a maximum of 20 systems.

When you define MM sites, MMR Setup adds default alerts and reports to the configuration, but they are unscheduled. For example, they print only when you select the Print command.

If you add Meridian Mail sites to a multisite configuration after this initial configuration, MMR Setup does not automatically add the sites to the download schedule. You must customize the Download Schedule in MMR Reports to include the new sites in the schedule.

7. If you are using a modem to connect MMR and Meridian Mail, click the Dial column, and then type the modem dial-up phone number for the Meridian Mail system.

The number can consist of a maximum of 40 alphanumeric characters. For a single site configuration, if you leave the column blank, MMR assumes that a direct RS-232 connection connects MMR and Meridian Mail. For a multisite configuration, you must complete the Dial column for each system since all sites in the configuration are accessed by modem.

8. Click the OM Password column, and then type the Meridian Mail access password required to download data files from MM10/11 systems. This password must be the same as the OM password set on the Meridian Mail system. Also, you must complete this column. The case-sensitive password must consist of at least six alphanumeric characters. To provide security, the password appears as a row of asterisks (*).

9. From the Release drop-down list, select the release of Meridian Mail that you have installed.

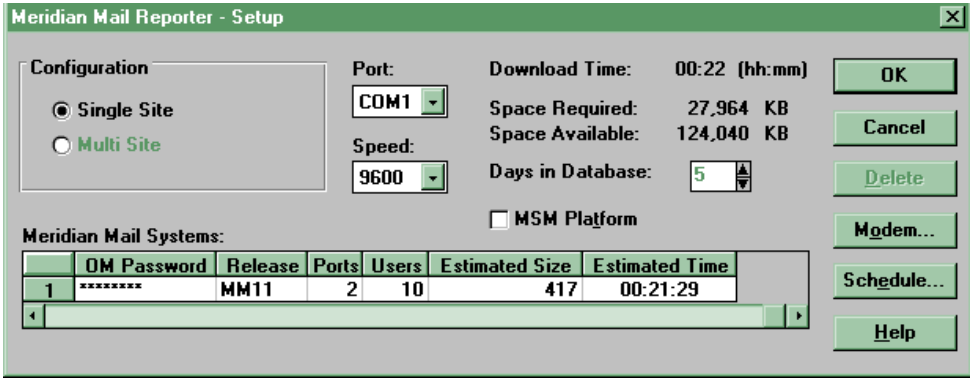
10. Click the Ports column, and then type the number of ports on the Meridian Mail system.

To define a Meridian Mail system as a SEER-only system, enter 0; therefore, the download schedule for the system automatically sets to download only the SEER file. To define a Meridian Mail system as a regular system, enter the number of ports, ranging between 2 and 192.

11. Click the Users column, and then type the approximate number of users on the Meridian Mail system.

To define a Meridian Mail system as a SEER-only system, enter 0; to define a Meridian Mail system as a regular system, enter the number of users, ranging between 10 and 40 000.

Figure 3-9
Meridian Mail Systems table (scrolled to the right)



The remaining columns in the Meridian Mail Systems table are view only:

- *Estimated Size* indicates the estimated kilobyte (kb) total of data expected in a daily download based on the configuration that you have entered. For a SEER-only system, this column shows the estimate only for the SEER file. To see this column, you must scroll to the right in the Meridian Mail Systems table as shown in Figure 3-8.

- *Estimated Time* indicates the amount of time required to download data daily from the Meridian Mail system as it is currently configured. For a SEER-only system, this column shows the estimate only for the SEER file. The display format is hours, minutes, and seconds in 24-hour format. To view this box, you must scroll right in the Meridian Mail Systems Table.

The remaining boxes in the Meridian Mail Reporter - Setup window are view only:

- *Download Time* indicates the total amount of time required to download all data from the Meridian Mail system(s) that you have configured. If the total time is longer than the imposed 20-hour limit, the Download Time box appears in red, and MMR cannot save the configuration because its daily processing cannot complete within 24 hours. If you attempt to close the Meridian Mail Reporter - Setup window by clicking OK, MMR opens an error dialog box. For a multisite configuration, if the Download Time for all sites exceeds the maximum time allowed, you may have to remove sites. Instead, you could use a second copy of MMR running on a separate PC to handle additional sites.

- *Space Required* shows the amount of free space required to store the download data for the selected configuration. If the amount of space required is greater than the amount of available hard disk space or 550 Mbytes, MMR does not allow you to save the configuration and opens an error dialog box. Decreasing the value of the Days in Database box decreases the disk space required.

- *Space Available* indicates the amount of free space available on the MMR PC's hard disk.

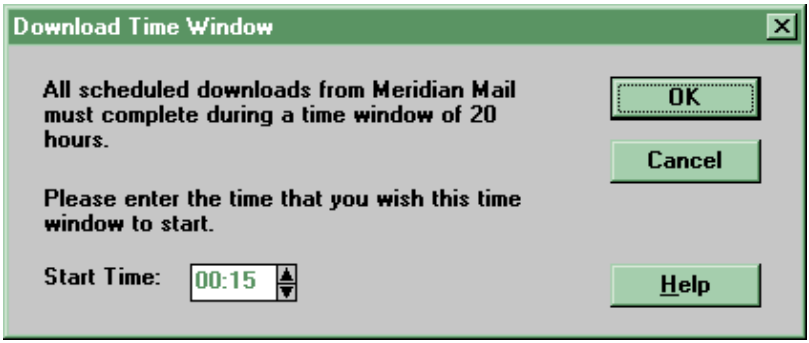
12. If you are using a modem to connect the MMR PC to Meridian Mail and you want to customize the modem settings, click Modem to open the Modem Commands dialog box. The default settings are for the US Robotics Sportster 14 400. For information about other modems' settings and the

procedure for changing them, refer to the “Modems and Modem Settings” section in Appendix A.

13. If you want to change the default start time of data download from Meridian Mail, click Schedule to open the Download Time Window dialog box. The default is 00:15 a.m. Use the spin button to change the time for the download to start, and click OK to save the new time.

For information about customizing the download schedule, see the MMR Reports section in the chapter “Using MMR and its Online Help.”

Figure 3-10
Download Time Window dialog box


Download Time Window
All scheduled downloads from Meridian Mail must complete during a time window of 20 hours.
Please enter the time that you wish this time window to start.
Start Time:
00:15
OK
Cancel
Help

14. Go to Procedure 3-4, “To finish installing Meridian Mail Reporter.”

Procedure 3-4
To finish installing Meridian Mail Reporter

1. In the Meridian Mail Reporter - Setup window, click OK to save all configuration data and continue with the installation.

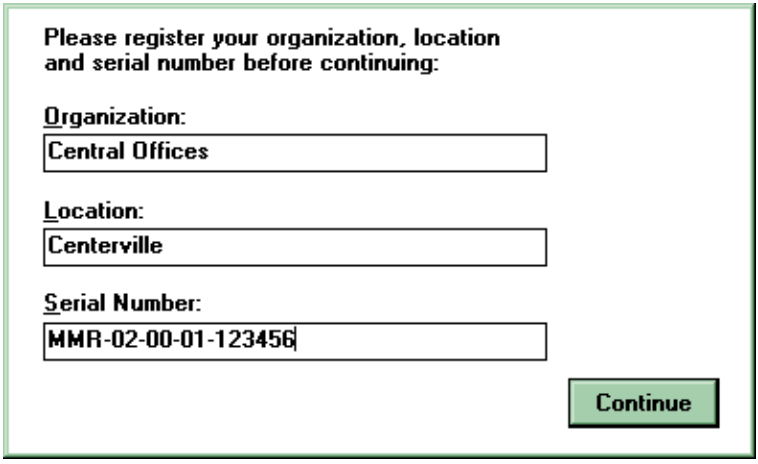
MMR Setup then shows the Registration Information screen.

2. Click the Organization box, and then type the name (50 alphanumeric characters or less) of the company where you work.

3. Click the Location box, and then type the name of the city (50 alphanumeric characters or less) where the company is located.

4. Click the Serial Number box, and then type your MMR serial number found in your software license information and on Disk 1.

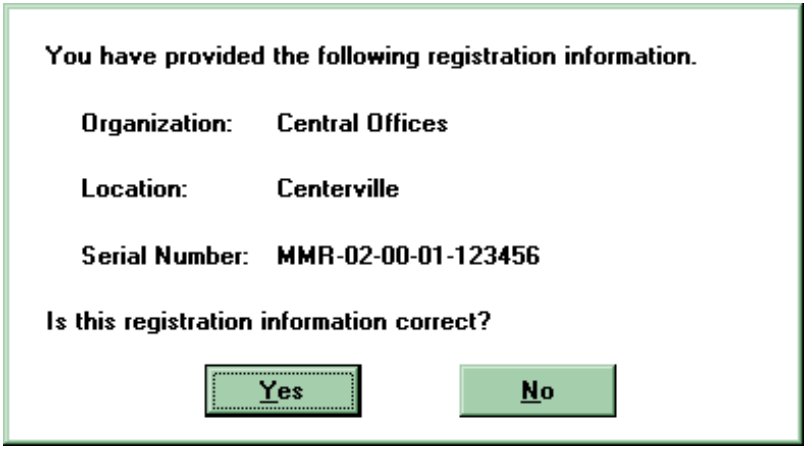
Figure 3-11
Registration Information screen



5. Click Continue.

The Registration Confirmation screen appears.

Figure 3-12
Registration Confirmation screen



6. If the information is correct, click Yes.

or

If the information is incorrect, click No to return to the Registration Information screen. Correct the data, and then click Continue to return to the Registration Confirmation screen.

MMR Setup prompts you to insert the next disk.

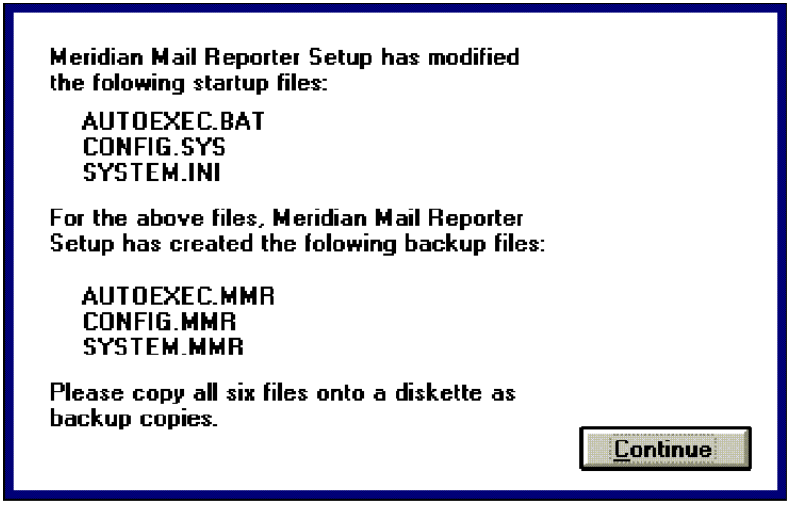
7. Insert the disk in the floppy drive.

8. Click OK.

9. Repeat Steps 7 and 8 until MMR Setup has copied all files to the MMR PC hard drive.

In Windows 3.1 and Windows NT, MMR Setup informs you of changes to the startup files with the Startup Files Notification screen. MMR makes changes to the AUTOEXEC.BAT, CONFIG.SYS, and SYSTEM.INI files so that after you reboot your PC, MMR will start automatically. Before MMR makes the changes to these files, it creates backup copies named AUTOEXEC.MMR, CONFIG.MMR, and SYSTEM.MMR. Copy all six of these files onto a diskette and keep them as backup.

Figure 3-13
Startup Files Notification screen

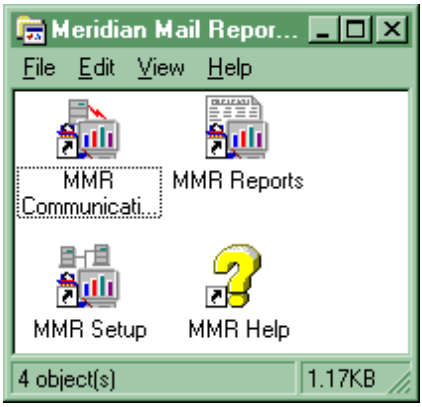

Meridian Mail Reporter Setup has modified the folowing startup files:
AUTOEXEC.BAT
CONFIG.SYS
SYSTEM.INI
For the above files, Meridian Mail Reporter Setup has created the folowing backup files:
AUTOEXEC.MMR
CONFIG.MMR
SYSTEM.MMR
Please copy all six files onto a diskette as backup copies.
Continue

For Windows 3.1 and Windows NT

Click Continue.

Next, MMR Setup creates an MMR Program Group containing the MMR icons as shown in Figure 3-14, taken from Windows 95.

Figure 3-14
MMR Program Group window



After creating the MMR Program Group, MMR Setup prompts you to reinsert Disk 1 to complete the installation process.

10. Insert Disk 1 into the floppy drive.

11. Click OK.

Then, with the Exit Installation screen, MMR Setup prompts you to reboot (if you are installing in Windows 3.1) or to return to Windows. You must reboot in Windows 3.1 to let MMR Communications check Dynamic Link Libraries (DLLs) and a device driver. Rebooting or returning to Windows makes all installation options take effect.

For Windows 3.1

Click Reboot.

For Windows NT, Windows for Workgroups, and Windows 95

Click Return to Windows.

After Installation

Meridian Mail Reporter software is now installed and you can use each MMR program. Refer to Chapter 4, “Using MMR and its Online Help,” for information on the programs and how they work together. You can use online help to learn how to use MMR.

The following sections explain how to change your password, and what features each of the three MMR programs offer.

Changing Your Password

If you cannot remember your password, you can define a new one by using the installation program on MMR Disk 1. The installation program recognizes that MMR is already installed and prompts you for the necessary information.

Procedure 3-5
To define a new password under Windows 95

1. Insert MMR Disk 1 into the floppy drive.

2. Click Start, and then click Run to open the Run dialog box.

3. Click the Open box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

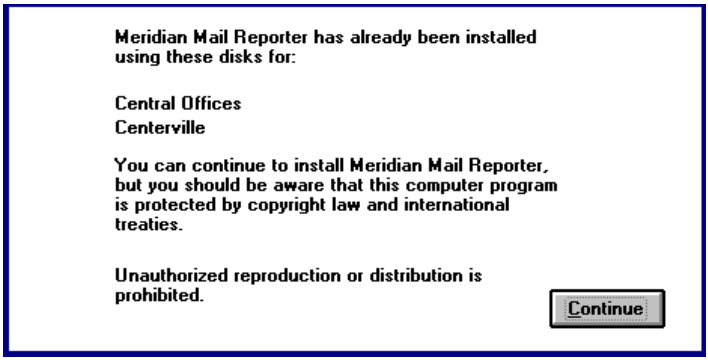
4. Click OK.

The MMR Setup Welcome screen appears.

5. Click OK.

The Installation Warning screen appears.

Figure 3-15
Installation Warning screen


Meridian Mail Reporter has already been installed using these disks for:
Central Offices
Centerville
You can continue to install Meridian Mail Reporter, but you should be aware that this computer program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution is prohibited.
Continue

6. Click Continue.

7. Click the Logon password box, and then type a new password.

The password must consist of at least 6 and no more than 16 characters. The password is not case sensitive: you do not need to remember if you enter the characters in upper or lower case.

8. Click Continue.

The Directory Destination screen appears.

9. Click Continue.

The Overwrite screen appears and gives you the option of doing four things. You can change your password, install data files and a new password, install all the program files and change the password, or do a complete reinstallation.

Figure 3-16
Overwrite screen

.

Setup has detected an existing installation of Meridian Mail Reporter on your computer.
If you want to keep your existing installation, choose Exit to terminate Setup, rename the Meridian Mail Reporter directory, then run Setup again.
Otherwise, choose the options you wish to install from the list below, then choose Continue.
Password only
Data files & password
Program files & password
Complete installation
Continue
Help

10. Make sure the Password only radio button is filled.

11. Click Continue.

MMR Setup asks you to insert Disk 1 even though it is already inserted.

12. Click OK.

Procedure 3-6
To define a new password under Windows 3.x, Windows NT, and Windows for Workgroups

1. Insert MMR Disk 1 into the floppy drive.

2. Double-click Program Manager.

3. On File, click Run to open the Run dialog box.

4. Click the Command Line text box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

5. Click OK.

The MMR Setup Welcome screen appears.

6. Click OK.

The Installation Warning screen appears.

7. Click Continue.

8. Click the Logon password box, and then type a new password.

The password must consist of at least 6 and no more than 16 characters. The password is not case sensitive: you do not need to remember if you enter the characters in upper or lower case.

9. Click Continue.

The Directory Destination screen appears.

10. Click Continue.

The Overwrite screen appears and gives you the option of doing four things. You can change your password, install data files and a new password, install all the program files and change the password, or do a complete reinstallation.

11. Make sure the Password only radio button is filled.

12. Click Continue.

MMR Setup asks you to insert Disk 1 even though it is already inserted.

13. Click OK.

When to Use the Three MMR Programs

The following sections describe when to use the three MMR programs and help introduce their features, which Chapter 4, "Using MMR and its Online Help," explains.

MMR Setup

You can start MMR Setup any time after installation to add, delete, or change existing Meridian Mail system(s) parameters**.**

Note: If your system configuration changes as a result of upgrading to a multisite configuration, adding MM ports, or deleting or adding MM systems, you must change the MMR system configuration. You have to shut down MMR Communications and MMR Reports in order to make changes to the system's configuration in MMR Setup. Online help will guide you through the process as it did during installation. Also, when you add a new Meridian Mail site, you must add it to the download schedule by running MMR Reports and customizing the Download Schedule:

- reconfigure the OM download serial port
- change the number of days to store OMs in the database
- reconfigure the modem command strings
- change the download start time

MMR Communications

MMR Communications always works in the background while you run MMR. MMR Communications should execute 24 hours a day, managing communications between MMR and Meridian Mail. Always ensure that MMR Communications executes by keeping the PC power on and running Microsoft Windows at all times. MMR Communications stops when you power off the PC, exit Windows, or specifically stop the program.

MMR Communications provides all required communication to the Meridian Mail system, controls the download process, and moves the Operational Measurements data to the MMR database. Also, MMR Communications logs all link activity in file format and provides an error log which proves useful during problem determination. See Chapter 13, "Troubleshooting," for more information on problems and associated corrective actions. You can also access online troubleshooting information.

MMR Reports

MMR Reports gives you access to most of the system functions. Using MMR Reports, you can print reports. You can also set your report and download schedules, perform database management functions, and various other tasks.

Reports and Alerts

MMR Reports provides reports and alerts to help you analyze and manage your Meridian Mail system. Start MMR Reports after installation to view the default report settings or to change the schedule if required. Refer to the online help to learn about modifying the reports and alerts.

The following report appears in the Alert Palette for a SEER-only Meridian Mail system that you added to the configuration during installation: Critical SEERs Alert.

The following reports appear in the Alert Palette as the defaults for a regular Meridian Mail system that you added to the configuration during installation:

Critical SEERs Alert
Failed Outcalls Alert
Excessive After-Hours Logons Alert
Excessive Thru-Dialer Accesses Alert
Excessive Failed Logons Alert
Excessive Incomplete Voice Mail Accesses Alert

The following report appears in the Report Palette for a SEER-only Meridian Mail system that you added to the configuration during installation: SEER Query Report.

The following reports appear in the Report Palette as the defaults for a regular Meridian Mail system that you added to the configuration during installation:

Channel Problem Identification Report
Disk Usage Monitor
Inactive User Report
Meridian Mail Productivity Report
Outcalling Activity Report
Top Users of Storage Report
Users Exceeding COS Storage Limit
Voice Messaging Activity Report

The system automatically establishes the default download schedule following these rules:

- MM sites are scheduled to begin downloading data in the same order they are added to the Meridian Mail Systems table during installation.

- The Start Time field, configured in MMR Setup's Download Time Window dialog box, shows the time MMR Communications will connect to the first MM site to download data to the MMR database.

- The second MM site's download start time is derived by adding the download start time of the first MM site to the estimated time of the first MM site, plus some processing overhead.

- The third and all subsequent system download start times are derived by adding the estimated time of the previous download to the calculated start time of the previous download, plus some processing overhead.

After installation, you can view or change the download schedule by using MMR Reports. See Chapters 5 to 12 for detailed descriptions of all reports and alerts included with MMR Reports.

Chapter 4: Using MMR and its Online Help

Introduction

Now that you have finished installation, you need to know how to use MMR. This chapter describes some of the tasks that you can perform. The online help which comes with MMR also explains the same procedures, plus many others. Since the online help provides comprehensive information about using MMR, this chapter also details how to use the online help.

Using MMR

MMR is made up of three main programs: MMR Setup (MMRS), MMR Communications (MMRC), and MMR Reports (MMRR). After installation, these programs, along with the MMR Help file, make up the MMR Program Group. A fourth program, Setup, is located on the first MMR disk but is never copied onto the PC's hard drive.

As well, MMR contains two other programs of which you should be aware: MMR Loader (MMRL) and MMR Upgrade (MMRU). Since MMR Loader automatically attempts to restart MMR daily, you need to know how it functions. However, you never use MMR Loader. You rarely need to use MMR Upgrade; therefore, you must understand the necessary times for using the program.

The following sections describe Setup on the first installation disk, MMR Setup, MMR Communications, MMR Reports, MMR Loader, and MMR Upgrade. The sections identify the programs' important characteristics and describe how to use them. As well, another section outlines guidelines on operating MMR.

Installation Disk Setup

The Setup program on the first installation disk copies all of the MMR libraries and programs to the PC's hard drive, creating the MMR Program Group. In addition to copying files, however, the Setup program serves several other important purposes.

Before installing MMR files on the PC, Setup solicits and stores administrative information such as the MMR logon password and the drive on which MMR is to install. Setup also invokes MMR Setup to collect configuration details about the Meridian Mail systems from which MMR will collect information. Once the configuration details have been validated and saved, Setup solicits registration information and, then, copies MMR files from the installation disks to the hard drive.

For Windows 3.1, Setup analyzes and modifies three startup files: AUTOEXEC.BAT, CONFIG.SYS, and \WINDOWS\SYSTEM.INI. The modifications cause Microsoft Windows and MMRC to automatically start if you reboot the PC. Before modifying these files, Setup makes backup copies of the existing files and replaces their extensions with MMR: AUTOEXEC.MMR, CONFIG.MMR, and \WINDOWS\SYSTEM.MMR.

Note: You should copy the three modified files as well as the three backup files to a disk for safekeeping.

Even after installing MMR, Setup serves a number of important purposes. For example, if you forget your MMR logon password, you must run Setup (the first installation disk) to replace the forgotten password with a new one. Furthermore, Setup allows you to clear the existing database, reinstall the MMR program, or both. Therefore, Setup proves useful for special circumstances (for example, to recover if files are accidentally deleted).

MMR Setup

MMR Setup primarily captures configuration details about the Meridian Mail system(s) from which MMR will collect information. The details include such information as the number of ports on a Meridian Mail system, the number to dial to reach the Meridian Mail system (if the connection is established using a modem), and an OM (Operational Measurements) password (which is set on the Meridian Mail system) to ensure secure access. Other configuration information includes the number of days to store OM data in the database as well as the PC modem initialization strings. The system database stores this configuration information; the system database differs from the OM database, which stores the OM data from the Meridian Mail system. Typically, the system database is a very small database in comparison to the OM database.

In addition to its primary function, MMR Setup provides access to configuration information and creates the initial download schedule. After installation, you can use MMR Setup to view and modify configuration information. For example, should you decide to collect data from an additional Meridian Mail system after the initial installation, you would use MMR Setup to add the site to the system database. Based on the configuration details in the database, MMR Setup creates a download schedule. The download schedule is stored in the system database and is put into effect immediately following the installation process.

Note: After installation, you use MMR Reports to view and modify the download schedule even though MMR Setup initially creates the schedule.

MMR Communications

MMR Communications serves two main purposes: it manages both the communication link to the Meridian Mail system, and the schedules for downloading and printing reports. The following sections outline some of MMR Communications' important features.

Download Process

MMR Communications provides a variety of communication-related functions. The download process involves transferring, converting, and merging Operational Measurement (OM) files.

File Transfer

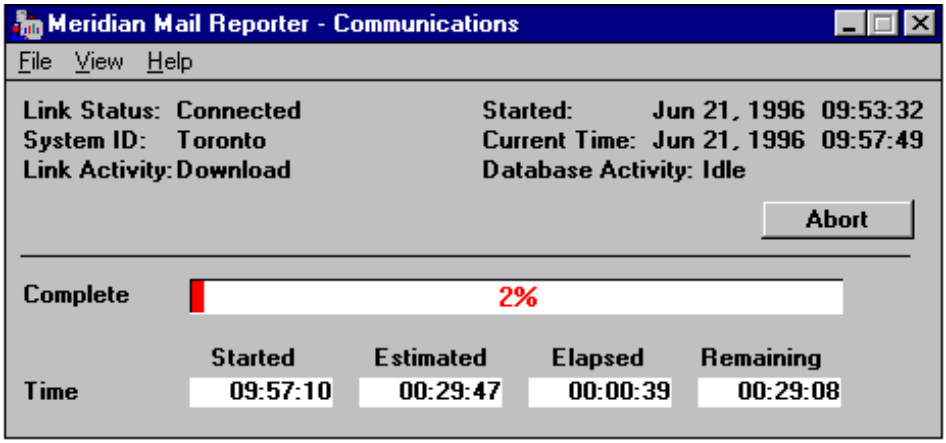
Primarily, MMR Communications transfers OM files from Meridian Mail to the PC using a proprietary packet protocol. Each time a connection is established to Meridian Mail, a file size estimate is sent to the PC, and MMR Communications changes the Link Activity status from Idle to Download. Using this estimate, MMRC displays a variety of statistics including the time remaining until the completion of the file transfer.

Note: When modems are used to connect to the Meridian Mail system, the Link Activity status will change from Idle to Dial when the call is first initiated. Once the link is established, the Link Activity status changes to Download.

File Conversion

When the file transfer is complete, MMR Communications changes the Link Activity status from Download to Idle and the Database Activity status from Idle to Busy. MMR Communications then launches MMR Reports and signals it to begin processing the new OM data from Meridian Mail. When MMR Reports receives this signal, it displays a message box on the screen (as a progress indicator) and begins to prepare the database for the new OM data.

Figure 4-1
Meridian Mail Reporter - Communications window



MMR Reports first purges the oldest day of data from the database in order to make room for the latest information.

Note: The oldest day of data is only purged once the number of days of data collected reaches the Days in Database value that is set through MMR Setup. Once the oldest day of data is purged, MMR Reports invokes a program that "converts" the OM files (which contain binary data) into a series of ASCII files. After the conversion, MMR Reports removes three tables from the database which are replaced with each download.

File Merge

When the database has been prepared for the new OM data, MMR Reports removes the message box and begins to merge the new OM files into the database, sending a signal to MMR Communications when beginning to merge each file. MMR Communications changes the Database Activity status from Busy to Merge [N of M] (where N is the number of the current file being merged and M is the total number of OM files to be merged) and tracks the progress of the merge operation.

When the last OM file is completely merged, MMR Communications changes the Database Activity status from Merge [N of M] to Idle and adds a time-stamped status message to the Log file, indicating that the download process has completed successfully.

As a final step in the download process, MMR Reports tests the newly merged OM data to determine whether any alert thresholds were exceeded. The MMR Reports section describes alert thresholds.

Download Schedules

The download schedule is repeated every 24 hours. Consequently, the time required to transfer new OM files, purge the oldest day of data, convert the OM files from binary to ASCII data, merge the new OM data into the database, and test for alert thresholds must complete within a 24-hour period. On the surface, this process may not appear difficult; however, there are two very important factors to consider: the number of transactions that take place on the Meridian Mail system, and multisite operation.

MMR transfers a number of OM files from the Meridian Mail system each day. The largest OM file transferred is the LOCBIL file, which contains a record for every transaction that took place on the Meridian Mail system during the previous 24 hours. On a 96-port system with 10 000 users, this file can reach several megabytes (Mbytes) in size. Since files transfer at a maximum of 9600 bits per second (bps), the file transfer operation alone can take several hours. In addition, the purge and merge operations are, relatively speaking, very time-consuming database operations. The merge operation itself can take several hours depending on the amount of new OM data to be merged, the size of the OM database (database performance decreases as the size of the database increases), and the power of the PC which is running MMR (a 90 MHz Pentium processor will merge data more quickly than a 66 MHz 486DX2 processor).

MMR can collect OM files from multiple Meridian Mail systems, a multisite configuration. In a multisite configuration, the download schedule contains an entry for each Meridian Mail system from which MMR is to collect data. The schedule is created automatically by MMR Setup during installation, and each download occurs in sequence. As with a single site operation, MMR must repeat the entire download schedule every 24 hours (that is, the aggregate of download operations from all sites must take less than 24 hours). Consequently, a multisite operation primarily suits collecting OM files from several small Meridian Mail systems; a single-site operation primarily suits one system of any size. If you have several large Meridian Mail systems, you may need to purchase a separate PC to run the MMR single-site version for each site.

To ensure that sufficient time is allowed for all downloads to complete within 24 hours, MMR imposes a 20-hour Download Time Window limit. By default, the download time window starts at 00:15 a.m. (and ends at 20:15 p.m.); however, the start time can be customized using MMR Setup. All download operations must take place within this window. The extra four hours allow for downloads that take longer than usual (for example, due to sudden peaks in Meridian Mail activity) and for print schedules which do not interfere with the download operation.

Scheduled downloads always transfer data from the previous full day (from midnight to midnight) of collected data. For example, a download scheduled on January 2nd at 01:00:00 hours will transfer OM data from January 1st at 00:00:00 to January 1st at 23:59:59.

Critical Errors

Sometimes a critical error occurs during the download process (for example, if the link between the MMR PC and Meridian Mail is over modems and the modem connected to the Meridian Mail system is inadvertently powered off, MMR Communications will not be able to establish a connection). If an error occurs, MMR Communications displays a Critical Error window which identifies the error.

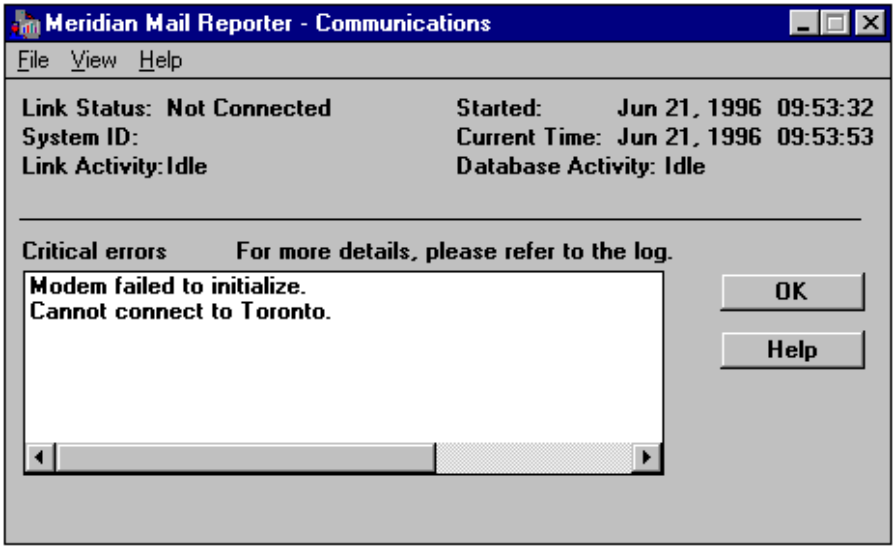
Procedure 4-1
To get help for a critical error

1. In the Meridian Mail Reporter - Communications window, select the error message.

2. Click Help.

The online Help shows information about the potential causes of the problem.

Figure 4-2
Critical Error window



Log File

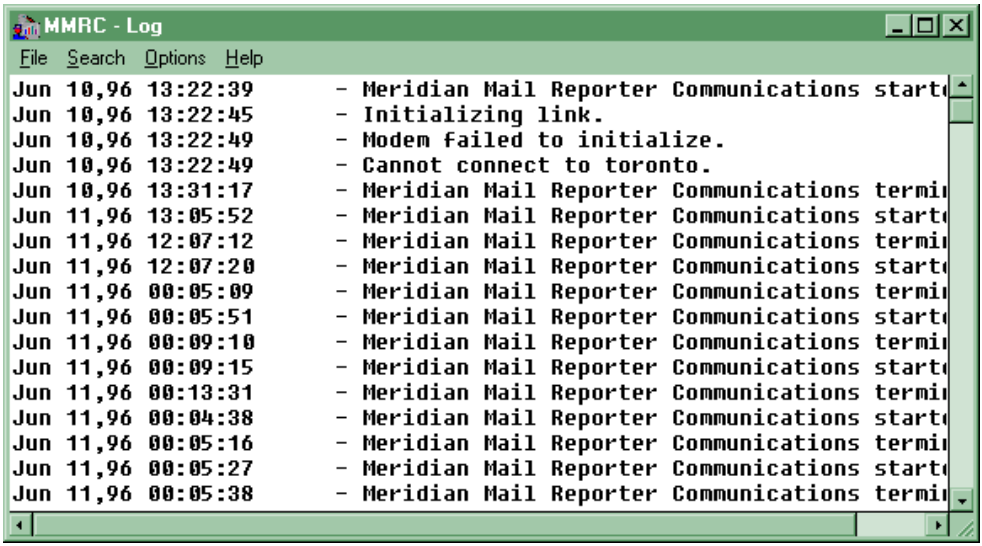
In addition to the Critical Error window, MMR Communications also captures time-stamped status messages throughout the download process. These messages are stored in a log file.

Procedure 4-2
To view the log file

- In the Meridian Mail Reporter - Communications window, on the View menu, click Log.

The log file appears in a separate window with its own menu bar. This menu bar allows you to print the file, search for text strings, and reinitialize the file (which causes MMR to archive the active log file as STATUS.BAK in the \Reporter directory and start a new log file). The log file captures status messages in chronological order.

Figure 4-3
Log File window


MMRC - Log
File Search Options Help
Jun 10,96 13:22:39 - Meridian Mail Reporter Communications start
Jun 10,96 13:22:45 - Initializing link.
Jun 10,96 13:22:49 - Modem failed to initialize.
Jun 10,96 13:22:49 - Cannot connect to toronto.
Jun 10,96 13:31:17 - Meridian Mail Reporter Communications termi
Jun 11,96 13:05:52 - Meridian Mail Reporter Communications start
Jun 11,96 12:07:12 - Meridian Mail Reporter Communications termi
Jun 11,96 12:07:20 - Meridian Mail Reporter Communications start
Jun 11,96 00:05:09 - Meridian Mail Reporter Communications termi
Jun 11,96 00:05:51 - Meridian Mail Reporter Communications start
Jun 11,96 00:09:10 - Meridian Mail Reporter Communications termi
Jun 11,96 00:09:15 - Meridian Mail Reporter Communications start
Jun 11,96 00:13:31 - Meridian Mail Reporter Communications termi
Jun 11,96 00:04:38 - Meridian Mail Reporter Communications start
Jun 11,96 00:05:16 - Meridian Mail Reporter Communications termi
Jun 11,96 00:05:27 - Meridian Mail Reporter Communications start
Jun 11,96 00:05:38 - Meridian Mail Reporter Communications termi

Procedure 4-3
To view log file messages that do not appear on screen

- In the Log File window, click the down arrow on the scroll bar.

or

- Press both <Control> and <End> simultaneously.

In order to ensure that the log file never takes up too much disk space, the active log file will automatically be archived whenever it reaches 32 000 bytes in size, which is the space required to hold status messages from approximately 20 regular download operations. When the active log file reaches its size limit, the previously archived version of the log file (that is, the STATUS.BAK in the \Reporter directory) is overwritten.

MMR Reports

MMR Reports produces reports; consequently, you will use MMR Reports more frequently than any of the other programs. The following sections describe some of MMR Reports' important features.

Reports, Alerts, and Palettes

MMR Reports' design is easy to learn and caters to first-time users, but it also provides numerous customization options, offering considerable flexibility to experienced users. The design's simplicity depends on three very important concepts: reports, alerts, and palettes.

Reports

Like many database applications, the reports in MMR provide a mechanism for retrieving and presenting data from the OM database. Each report in MMR actually represents a copy of one of 29 predefined templates. Each template contains a report's basic database query and output format. The reports contain the same information as the template along with a Custom Name and a System ID. The Custom Name is a 50-character, editable field that defaults to the original name of the template; the System ID is the name of a Meridian Mail site (as defined in MMR Setup during installation). The available System IDs for a report appear in a drop-down list. Each report must have a unique combination of Custom Name and System ID for identification. Besides the Custom Name and System ID, each report also contains a number of customization options including a print schedule, a reporting interval, sort keys, filter parameters, and several output options.

Alerts

Alerts are a special type of report which have no filters. Instead, each alert has a threshold value which is tested at the end of every download. For example, the

Excessive After-Hours Logons alert tests to see whether the number of after-hour logons in the previous 24 hours exceeds a threshold (this threshold is changeable). If the alert threshold is exceeded, the alert is said to have been triggered. In the Alert Palette, a triggered alert appears with a red highlight in order to capture the administrator's attention. Each alert in MMR is actually a copy of one of nine predefined templates and includes a Custom Name, System ID, print schedule, reporting interval, sort keys, and several output options.

Palettes

A palette is a scrolling list of alerts or reports. MMR has two palettes which appear in the Meridian Mail Reporter - Reports window: an Alert Palette and a Report Palette. The Alert Palette contains a portfolio of up to 120 custom alerts; the Report Palette contains a portfolio of up to 200 custom reports. Upon installation, six alerts and eight reports are placed, as default entries, in their respective palettes for each Meridian Mail system in the configuration. For example, if MMR is to collect information from two Meridian Mail systems, the default palettes will contain 12 alerts and 16 reports. You can add any of the 38 predefined templates to a palette, while alerts and reports that already appear in the palettes you can duplicate or remove.

Reporting Interval

The Meridian Mail Reporter - Reports window contains a menu bar, the Alert Palette, and the Report Palette. From this window, you can preview reports. Previewing reports requires that you understand the reporting interval for reports.

Procedure 4-4
To preview a report

1. In the Meridian Mail Reporter - Reports window, click the report.

2. On the File menu, click Print Preview.

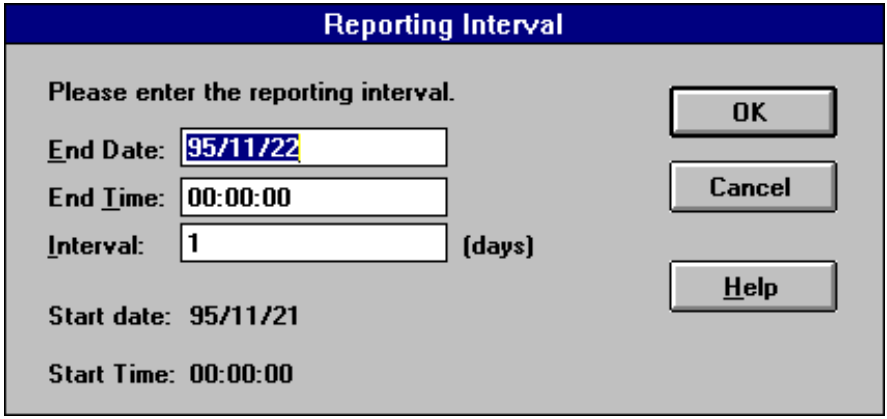
Note: A convenient shortcut for the Print Preview command is to double-click on the report.

The Reporting Interval dialog box appears.

3. Click OK.

The report appears in the Print Preview window.

Figure 4-4
Reporting Interval dialog box



All of the alerts and 24 of the 29 reports require a reporting interval. An End Date and an Interval specified in days defines the reporting interval. The Start date of the report is calculated by subtracting the Interval from the End Date. For example, if the End Date is January 8th and the Interval is seven days, the Start date of the report is January 1st.

Whenever an alert or report (that requires a reporting interval) is previewed, the Reporting Interval dialog box first appears to solicit information. The dialog box contains a default End Date (the current date), a default End Time (midnight), and a default Interval (which varies for each alert and report). All reports and alerts that require a reporting interval begin at 00:00:00 on the first day of the interval and end at 23:59:59 on the final day.

Procedure 4-5
To edit the reporting interval

1. In the Meridian Mail Reporter - Reports window, click the report.

2. On the File menu, click Print Preview.

The Reporting Interval dialog box appears.

3. Click the End Date box, and then type a three-letter abbreviation for the month followed by the day (for example, **Jan 2** instead of 02/01/95). MMR Reports assumes the current year.

4. Click the End Time box, and then type the time by using single digits and a decimal point (for example, **0.0** instead of 00:00).

5. Click the Interval box, and then type the number of days for the reporting interval.

6. Click OK.

Before issuing a query to the database, MMRR subtracts one second from the end date and time in order to facilitate user interaction. For example, on January 2nd, the default end date and time would be 02/01/95 and 00:00 respectively. A report with an interval of 1 day would retrieve data from January 1st at 00:00:00 to January 1st at 23:59:59.

Specific Reports and the Reporting Interval

The Inactive User Report uses the Reporting Interval dialog box somewhat differently than other reports. This report identifies individuals who have not logged on since the End Date. For example, if today is January 15th and the End Date is set to January 1st, the report will display the list of users who have not logged in to their mailbox since January 1st (that is, for at least the past two weeks). Note that this report ignores the End Time and the Interval fields in the Reporting Interval dialog box.

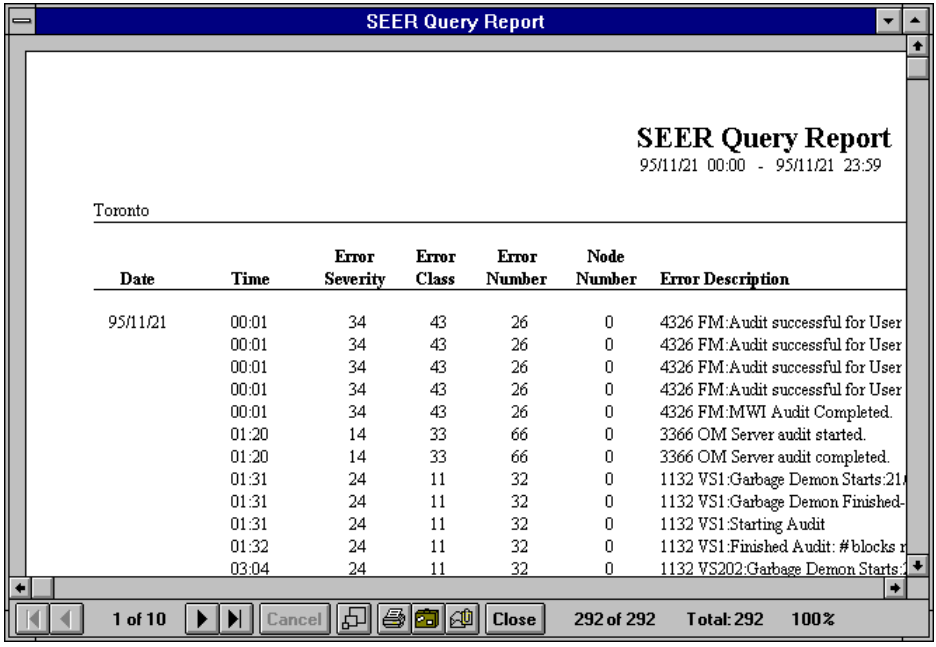
Five reports do not require a reporting interval: Class of Service, Mailbox Counts, Top Users of Storage, User Directory, and Users Exceeding COS Storage Limit. These reports appear as soon as you select the Print Preview command. Also, in contrast to all the other reports, the Mailbox Counts report produces four distinct reports when previewed or printed.

Print Preview

The Print Preview command issues a query to the database and opens the Print Preview window which contains the report. The Print Preview window provides a series of control buttons which are, from left to right: First Page, Previous Page, Next Page, Last Page, Cancel, Zoom, Print, Export, Mail Export, and Close. In the center of these buttons, the display shows the current page in the total page count. To the right of the Close button, internal status indicators appear. During the report retrieval process, these indicators reflect the result of queries to the database.

Some reports take several minutes to retrieve the data required for the report. The time required to produce a report depends on the size of the database and the complexity of the query.

Figure 4-5
Print Preview window


SEER Query Report
SEER Query Report
95/11/21 00:00 - 95/11/21 23:59
Toronto
Date Time Error Severity Error Class Error Number Node Number Error Description
95/11/21 00:01 34 43 26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:MWI Audit Completed.
01:20 14 33 66 0 3366 OM Server audit started.
01:20 14 33 66 0 3366 OM Server audit completed.
01:31 24 11 32 0 1132 VS1:Garbage Demon Starts:21
01:31 24 11 32 0 1132 VS1:Garbage Demon Finished-
01:31 24 11 32 0 1132 VS1:Starting Audit
01:32 24 11 32 0 1132 VS1:Finished Audit: # blocks r
03:04 24 11 32 0 1132 VS202:Garbage Demon Starts:1
1 of 10
Cancel
Close
292 of 292
Total: 292
100%

Procedure 4-6
To stop report retrieval

- In the Print Preview window, while the retrieval is underway, click Cancel.

Procedure 4-7
To magnify a report

- In the Print Preview window, click the Zoom button to switch to the next magnification level.

Procedure 4-8
To print a report

- In the Print Preview window, click the Print button.

The reports in MMR Reports can be exported to a variety of other Windows 3.1 applications such as Microsoft Excel and Microsoft Word for Windows 2.0.

Procedure 4-9
To export a report

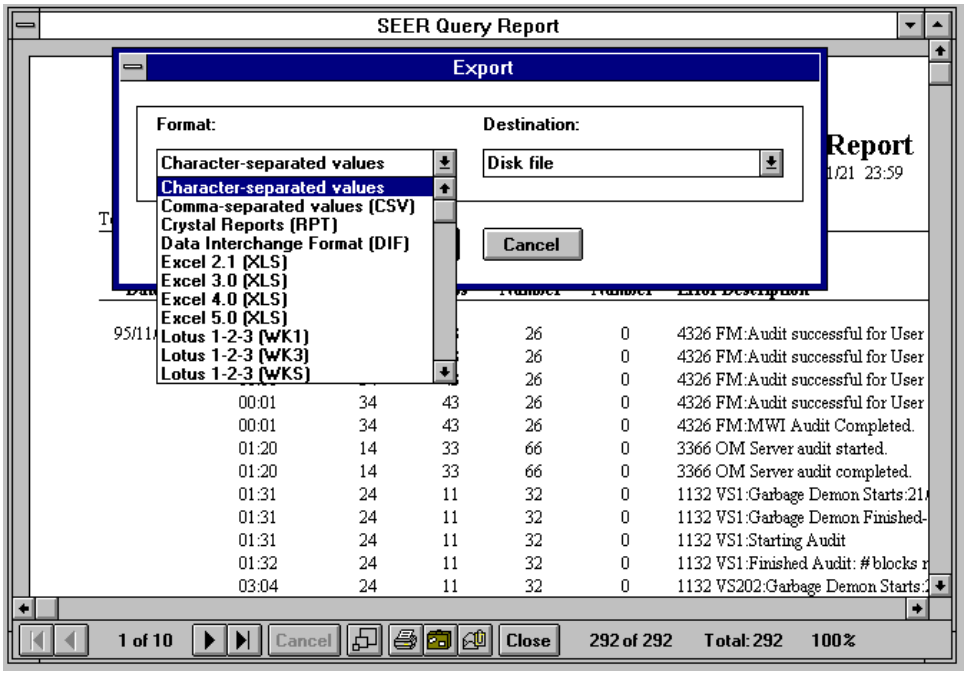
1. In the Print Preview window, click the Export button.

The Export dialog box opens.

2. From the Format drop-down list, select an application type.

3. Click OK.

Figure 4-6
Format drop-down list in the Export dialog box


SEER Query Report
Export
Format:
Destination:
Character-separated values
Disk file
Character-separated values
Comma-separated values (CSV)
Crystal Reports (RPT)
Data Interchange Format (DIF)
Excel 2.1 (XLS)
Excel 3.0 (XLS)
Excel 4.0 (XLS)
Excel 5.0 (XLS)
Lotus 1-2-3 (WK1)
Lotus 1-2-3 (WK3)
Lotus 1-2-3 (WKS)
Cancel
Report
1/21 23:59
26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:Audit successful for User
00:01 34 43 26 0 4326 FM:MWI Audit Completed.
01:20 14 33 66 0 3366 OM Server audit started.
01:20 14 33 66 0 3366 OM Server audit completed.
01:31 24 11 32 0 1132 VS1:Garbage Demon Starts:21
01:31 24 11 32 0 1132 VS1:Garbage Demon Finished-
01:31 24 11 32 0 1132 VS1:Starting Audit
01:32 24 11 32 0 1132 VS1:Finished Audit: #blocks r
03:04 24 11 32 0 1132 VS202:Garbage Demon Starts:
1 of 10
Cancel
Close
292 of 292
Total: 292
100%

When it first opens, the Print Preview window measures about three quarters of the screen and appears in its center. You can maximize the window for easier viewing.

Procedure 4-10
To compare another report to the current one

1. Click a visible portion of the Meridian Mail Reporter - Reports window.

2. Double-click the report that you want to compare with the current one.

3. Move and resize the two Print Preview windows.

Note: It is important to note that each open Print Preview window (whether it is minimized or not) uses up memory on the PC. You may run out of memory by keeping too many reports open simultaneously (in much the same way that you can run out of memory if you keep too many PC applications open simultaneously).

Graphs

Six reports produce graphs when you print preview them: Channel Problem Identification, Disk Usage Monitoring, Fax Deliveries Activity, Multimedia Application Caller Analysis, Network Activity, and System Traffic Summary. The first two reports produce only one type of graph while the remaining four have a single-day format as well as a multi-day format. The format which is used is determined by the reporting interval (that is, a one-day interval produces a single-day format while a seven-day interval produces a multi-day format).

Note: The Multimedia Application Caller Analysis graph is only produced if the report is filtered on a specific session ID. An explanation about filtering appears in the Customization section. Also, the Network Activity graph shows the networking traffic to individual sites only if there are fewer than 10 sites defined in the networking database. For networks with 10 or more sites, the Network Activity graph displays the aggregate traffic to all sites. Site-specific traffic information is captured in the tabular form of the Network Activity report.

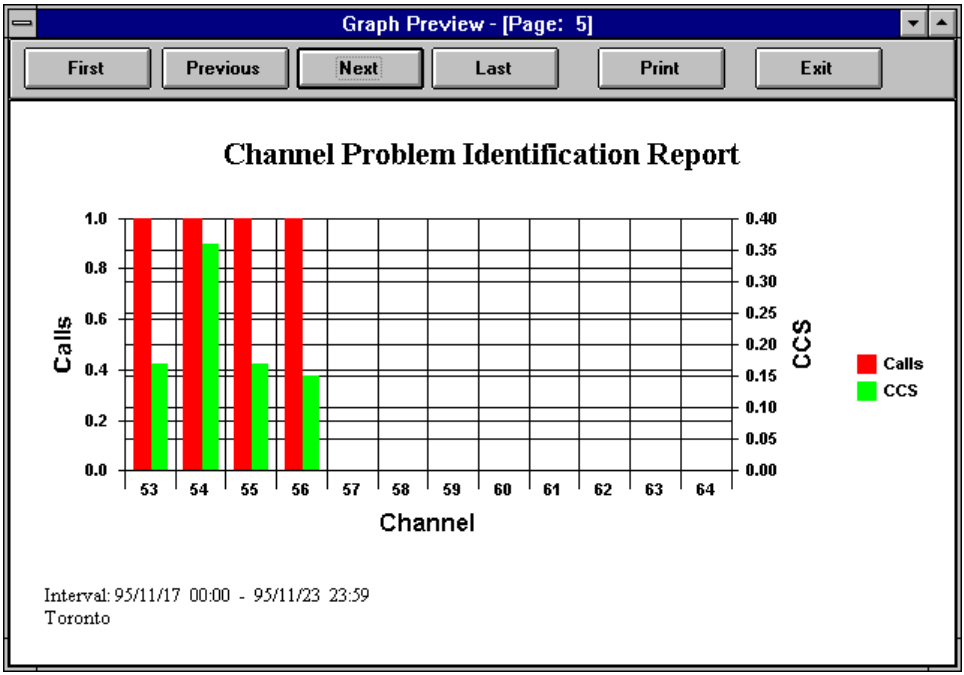
The graphs are produced in a separate and somewhat different form of the Print Preview window, called a Graph Preview window, that overlaps the tabular form of the report. The Graph Preview window provides a series of control buttons near its top. The four buttons in the top left-hand corner allow you to select the page that you want: First, Previous, Next, and Last. The current page number appears in the window's title bar.

Procedure 4-11
To print a graph

- In the Graph Preview window, click Print.

When it first opens, the Graph Preview window measures almost full-size and appears in the screen's bottom right corner. You can maximize the window for easier viewing.

Figure 4-7
Graph Preview window



When it first opens, the Graph Preview window measures almost full-size and appears in the screen's bottom right corner. You can maximize the window for easier viewing.

Procedure 4-12
To compare another graph to the current one

1. In the Graph Preview window, click a visible portion of the Meridian Mail Reporter - Reports window.

2. Double-click the graph that you want to compare with the current one.

3. Move and resize the two Graph Preview windows.

Note: You can never open more than one Graph Preview window at the same time. If you preview an additional graph when a Graph Preview window is already open, the new graph is appended to the open window as a series of additional pages.

Procedure 4-13
To view several graphs

1. Minimize the Graph Preview window.
2. Click a visible portion of the Meridian Mail Reporter - Reports window.
3. Double-click the graph that you want to view.
4. Repeat Step 3 until all the graphs you want are open.
5. Maximize the Graph Preview window.
6. Page through the window.

Note: As with the Print Preview window, an open Graph Preview window (whether it is minimized or not) uses up memory on the PC. You may run out of memory by retrieving too many graphs simultaneously.

Triggered Alerts

Whenever an alert is triggered (after a download), the alert itself turns red. If at least one alert is triggered, the Alert Palette's title also turns red (since the triggered alert may not appear in the palette's visible portion). If MMR Reports is minimized in Windows 3.1 or Windows NT and an alert is triggered, the program's icon becomes red and an exclamation mark begins to flash. Under any version of Windows, if the PC bell is audible, it begins to beep twice a second.

Procedure 4-14
To clear an alert

1. In the Meridian Mail Reporter - Reports window, in the Alert Palette, click the triggered alert.
2. On the Maintenance menu, click Clear Alert.

Note: A convenient shortcut for the Clear Alert command is to press <F5>. Once all of the triggered alerts have been cleared, all the red highlights disappear and the PC stops beeping.

In order to determine the cause of an alert, you can view or print the alert to review the details it contains. Importantly, the data that caused the alert should be included in the report. If the report is viewed immediately after the alert is triggered, the offending data is contained in the data from the preceding day. However, if an alert is not viewed for several days after it is triggered, the offending data could have

occurred several days earlier. In order to ensure that the alert details include the date of the offending data, the reporting interval (which defaults to a single day) will automatically be increased until the alert is finally cleared.

Customization

The Customize menu in the Meridian Mail Reporter - Reports window gives you the ability to customize the Alert Palette, Report Palette, and Download Schedule. The following sections describe some procedures on how to customize the palettes and the download schedule, and gives tips on how you should use customization features.

Procedure 4-15
To open the Alert or Report Palette Customization window

- In the Meridian Mail Reporter - Reports window, on the Customize menu, click Alert Palette or Report Palette.

The Alert or Report Palette Customization window contains a menu bar, a palette, and a list of all available report templates.

Custom Name

Each alert and report in a palette must have a unique combination of System ID and Custom Name. Whenever a report is added to the palette, the Custom Name shows the original name of the report template. In order to maintain two or more copies of the same alert or report in a palette, each alert or report must have a different Custom Name. The Custom Name field is a 50-character alphanumeric field. For example, if the Sales department is using voice menu 1000 and the Customer Service department is using voice menu 1001, you may wish to have two Multimedia Application Caller Analysis reports in the Report Palette. The first report would have its filter set as Service ID IS EQUAL TO 1000, and its custom name could be set to MAC Analysis - Sales. The second report would have its filter set as Service ID IS EQUAL TO 1001, and its custom name could be set to MAC Analysis - Service.

Procedure 4-16
To edit the custom name

1. In the Alert or Report Palette Customization window, double-click the Custom Name column for the alert or report that you want to modify.

2. Select the existing name.

3. Type a new name.

Note: The Custom Name can be modified in any of the customization views.

Procedure 4-17
To add an alert or a report to a palette

1. In the Alert Palette or Report Palette Customization window, from the Available Reports or Available Alerts section, click the alert or report template that you want to add.

2. On the Edit menu, click Add.

Note: A convenient shortcut for adding a report to the palette is to simply double-click on the corresponding report template.

The cursor appears in the System ID cell of the newly added report.

3. Select a System ID from the drop-down list.

Note: A System ID must be specified.

4. Press Enter.

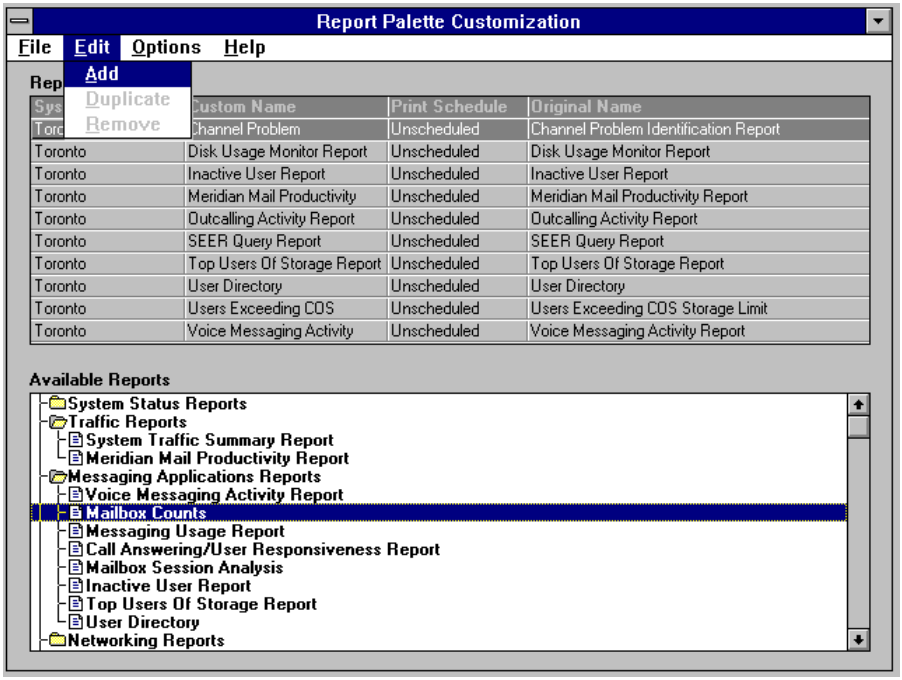
5. On the File menu, click Close to return to the Meridian Mail Reporter - Reports window.

MMR presents a confirmation message box.

6. Click OK.

After the changes save, the newly added alert or report appears in one of the window's palettes.

Figure 4-8
Adding a Report in the Report Palette Customization window



You also can duplicate and remove alerts and reports. For more information on how to perform these tasks, please refer to the online help.

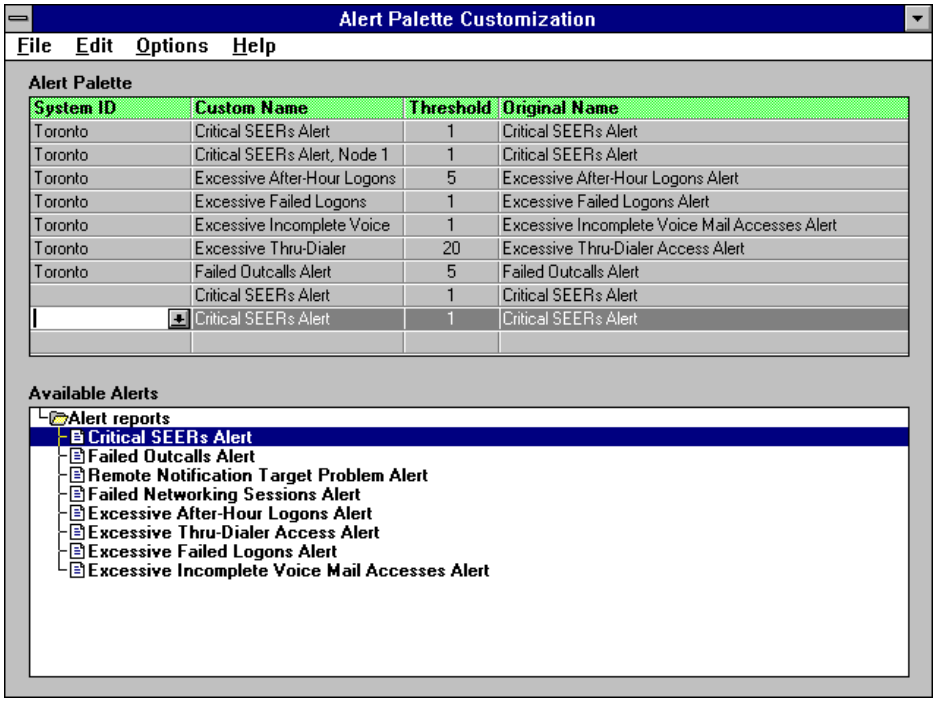
Tips for Customization

The following tips may help when customizing a palette:

- Palettes are sorted by System ID and then by Custom Name. Whenever a report is added, it appears at the bottom of the palette since the System ID is blank. The moment the System ID is confirmed, by pressing Enter, the report is instantly positioned in the correct sort order within the palette. If there are more than 10 reports in the palette, the instant sorting can make it seem like the report has disappeared. To see newly added reports, scroll through the palette.

- Even though each report must have a unique combination of System ID and Custom Name before the palette can be saved, it is possible to add several reports at a time by repeatedly adding reports from the List of Available Reports without specifying a System ID for each. Therefore, all of the newly added reports will appear together at the bottom of the palette (since the palette is sorted by System ID and then by Custom Name), making it easy to identify newly added reports.

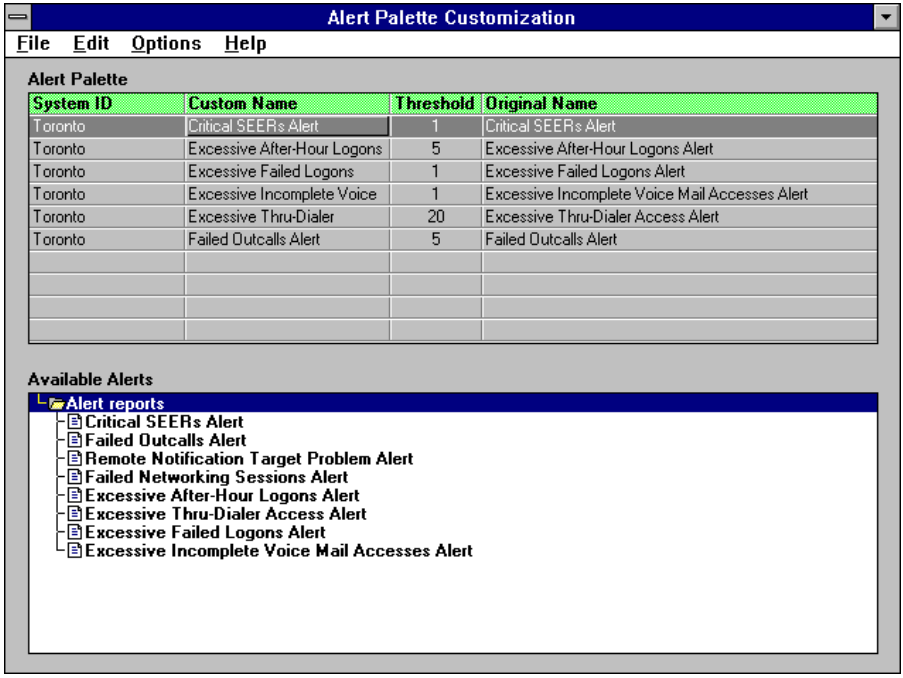
Figure 4-9
Group of Added Reports in the Alert Palette Customization window


Alert Palette Customization
File Edit Options Help
Alert Palette
System ID
Custom Name
Threshold
Original Name
Toronto Critical SEERs Alert 1 Critical SEERs Alert
Toronto Critical SEERs Alert, Node 1 1 Critical SEERs Alert
Toronto Excessive After-Hour Logons 5 Excessive After-Hour Logons Alert
Toronto Excessive Failed Logons 1 Excessive Failed Logons Alert
Toronto Excessive Incomplete Voice 1 Excessive Incomplete Voice Mail Accesses Alert
Toronto Excessive Thru-Dialer 20 Excessive Thru-Dialer Access Alert
Toronto Failed Outcalls Alert 5 Failed Outcalls Alert
Critical SEERs Alert 1 Critical SEERs Alert
Critical SEERs Alert 1 Critical SEERs Alert
Available Alerts
Alert reports
Critical SEERs Alert
Failed Outcalls Alert
Remote Notification Target Problem Alert
Failed Networking Sessions Alert
Excessive After-Hour Logons Alert
Excessive Thru-Dialer Access Alert
Excessive Failed Logons Alert
Excessive Incomplete Voice Mail Accesses Alert

- Whenever you attempt to save or close the Alert or Report Palette Customization window, MMRR verifies that each alert or report in the palette has a unique combination of System ID and Custom Name. In the event that one or more reports have identical System IDs and Custom Names, MMRR highlights the first occurrence of a non-unique combination. By repeatedly trying to Save the changes in a palette, you can systematically ensure that each alert or report has a unique combination. Once all of the combinations are unique, the palette is saved.

- You should print preview each alert or report after customizing it in order to verify that the alert or report behaves as expected. Before you preview the alert or report, you must save any changes in the Alert or Report Palette Customization window.

Figure 4-10
Alert Palette Customization window


Alert Palette Customization
File Edit Options Help
Alert Palette
System ID
Custom Name
Threshold
Original Name
Toronto Critical SEERs Alert 1 Critical SEERs Alert
Toronto Excessive After-Hour Logons 5 Excessive After-Hour Logons Alert
Toronto Excessive Failed Logons 1 Excessive Failed Logons Alert
Toronto Excessive Incomplete Voice 1 Excessive Incomplete Voice Mail Accesses Alert
Toronto Excessive Thru-Dialer 20 Excessive Thru-Dialer Access Alert
Toronto Failed Outcalls Alert 5 Failed Outcalls Alert
Available Alerts
Alert reports
Critical SEERs Alert
Failed Outcalls Alert
Remote Notification Target Problem Alert
Failed Networking Sessions Alert
Excessive After-Hour Logons Alert
Excessive Thru-Dialer Access Alert
Excessive Failed Logons Alert
Excessive Incomplete Voice Mail Accesses Alert

Threshold

The Threshold column appears only in the Alert Palette Customization window. This column defines the value that must be exceeded (in a 24-hour period) in order for the alert to be triggered. The title of the alert indicates the item being tested. For example, the Excessive Failed Logons Alert is triggered if the number of failed logon attempts (that is, attempts to a valid mailbox with an invalid password) exceeds the threshold since the previous download (that is, in the past 24 hours).

The default thresholds are relatively low in order to ensure that alerts are triggered for small as well as large Meridian Mail systems. After viewing the alerts for several days, the threshold can be set to a level that appears average so that the alert is only triggered in the event of unusual activity.

Note: It may be useful to have a series of alerts with differing thresholds since unusual activity on a weekday may be very different from unusual activity on a weekend or holiday. For example, on a regular business day, there may be 20 failed logons in a 24-hour period due to incorrectly typed passwords (which would suggest that the threshold for the Excessive Failed Logons alert should be set to 20

or 25). However, if far fewer people log on during the weekend, 20 failed logons may indicate that a hacker is trying to break into the system. A second copy of the Excessive Failed Logons alert with its threshold set to 2 could be added to the Alert palette.

Exceptions to the Threshold

Most alert thresholds are tested over a 24-hour period. The exceptions are the Excessive After-Hour Logon and the Excessive Thru-Dialer Access alerts which are triggered if the number of logons or thru-dialer accesses exceeds the threshold during the After Hours period. You can set this period by using the Maintenance menu in the Meridian Mail Reporter - Reports window. By default, the After Hours period starts at 6:00 p.m. and lasts until 6:00 a.m. The default also treats Saturday and Sunday as after hours.

Most alert thresholds are absolute numbers. The exceptions are the Failed Outcalls, Failed Networking Sessions, and Failed Fax Delivery alert thresholds which are percentages. These alerts will trigger if the number of failures as a percentage of attempts exceeds the threshold. For example, if the Failed Fax Delivery alert threshold is set to 5, the alert will trigger if more than 5% of fax delivery attempts are not delivered within a 24-hour period.

Other Options from the Alert or Report Customization window

From the Report Palette Customization window, you can access the following customization options for the palette: Sort, Filter, Output, and Print Schedule. From the Alert Palette Customization window, you can access the following customization options for the palette: Sort, Output, and Print Schedule. The following sections describe these options.

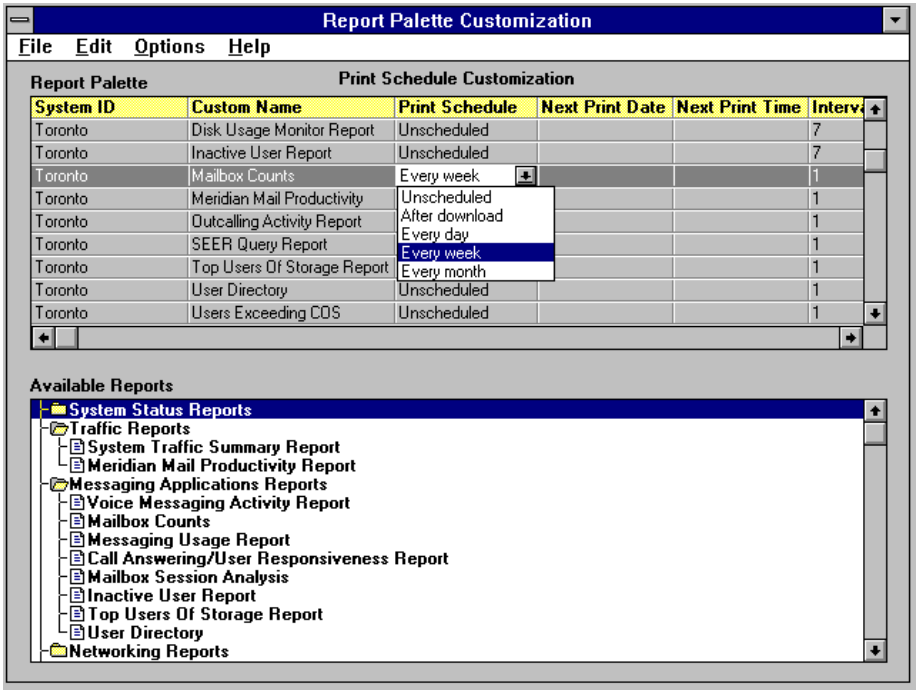
Print Schedule Customization

When MMR is first installed, the default alerts and reports in the palettes are not scheduled for printing (in order to ensure that reports do not begin to get printed unexpectedly). In the Print Schedule Customization window, you can schedule alerts and reports to print on a daily, weekly, or monthly basis as well as following each download. Also, you can schedule alerts to print only if they are triggered. This option makes it possible to turn MMR into a notification system that only prints reports whenever an alert is triggered.

Note: The reports will continue to print until the alert is cleared.

When scheduling the printing of an alert or report, you are requested to select the next print date and time. You should ensure that not all reports are printed at exactly the same time since this will overload the Print Manager and could lead to some reports not being printed.

Figure 4-11
Print Schedule Customization window



Note: The After Download scheduling option is equivalent to printing Daily, only instead of printing at a specified hour, the report is printed as soon as the download process is complete. Just as you cannot schedule several reports to print Daily, you cannot schedule more than one or two reports to print After Download.

Another important consideration when scheduling reports is to ensure that the printing schedule does not overlap the download schedule since reports should not be retrieved during a download.

Scheduled reports use a report interval that ends one second before midnight (23:59:59) on the preceding day and extends back for the number of days in the interval. For example, a report that is scheduled to print on January 2nd at 06:00:00 a.m. for an interval of one day will produce a report from January 1st at 00:00:00 a.m. to January 1st at 23:59:59 p.m. The report interval can be customized to match the print schedule. For example, a one-day interval is well suited for reports that are scheduled to be printed on a daily basis, while seven-day intervals would be more appropriate for weekly reports.

Reports that are scheduled to print every month are always printed on the first day of the month.

In addition to controlling the frequency with which reports are printed, Print Schedule options also control the frequency with which ASCII Data Files are created. The ASCII files are stored on the PC disk, and each new version of the ASCII file overwrites its predecessor.

Output Customization

In the Output Customization window, you can set when a report prints, create an ASCII file from the output of a report, and create tabular and graphical forms for reports.

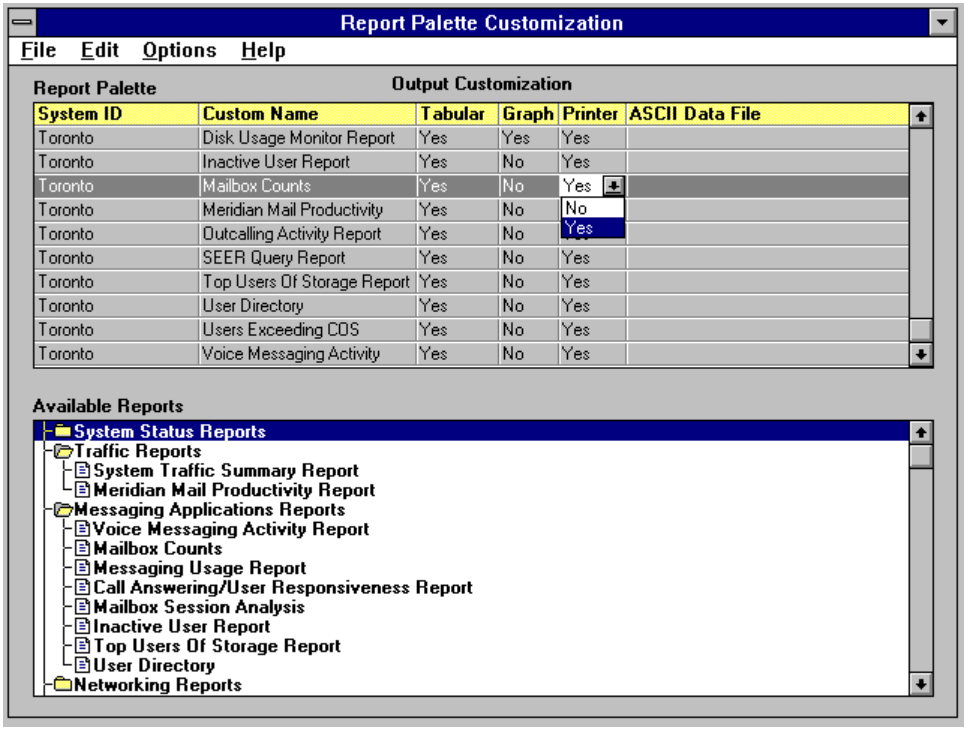
All MMR reports can be viewed or printed. However, Bill-Back Files are primarily intended as input to a centralized billing system. Consequently, the default Printer option (which enables the printing of a report) is set to No for all Bill-Back Files (and to Yes for all other reports).

The ASCII Data File option is used to determine whether to create a Comma-Separated Values (CSV) format ASCII file from the output of a report. If the option is left blank, no ASCII file is created. If the option has a DOS file name, then a file of the same name will be created in the \Reporter\ASCII directory of the default hard drive.If the option had a DOS path name (of up to 128 characters), then a file will be created at that location. It is important to note that the ASCII Data File option only controls the creation of scheduled reports. CSV format ASCII files (as well as several other PC format files) can be created from previewed reports by clicking the Export button in the Print Preview window.

All MMR reports have a tabular format, and six reports also have a graphical format. The Tabular and Graph options determine which form of the report to produce. By default, all but one of the six reports with a graphical format are set to provide both the Tabular and Graph forms of the report. The exception is the Channel Problem Identification report where the default setting provides only a graph. Note that the Graph option cannot be modified for the reports that do not offer a graphical format.

By using the standard Windows Print Manager, MMR Reports adapts to a variety of printers (such as ink jet and laser printers) and configurations (such as direct connect and LAN-based printers). Furthermore, MMR Reports can save reports as Post Script files by using Print Manager.

Figure 4-12
Output Customization window

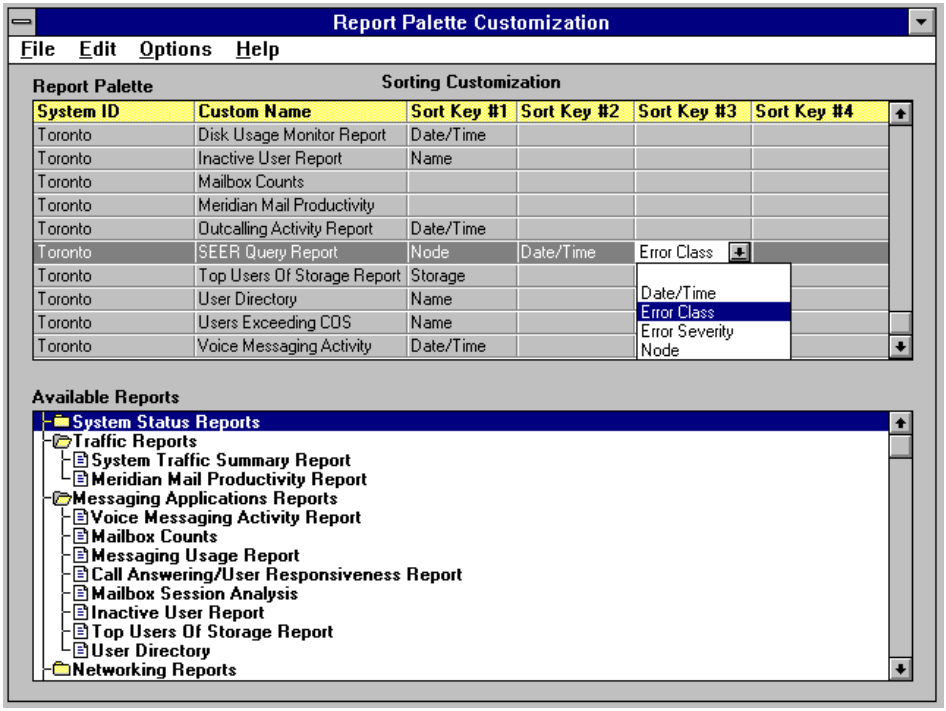

Report Palette Customization
File Edit Options Help
Report Palette
Output Customization
System ID | Custom Name | Tabular | Graph | Printer | ASCII Data File
Toronto | Disk Usage Monitor Report | Yes | Yes | Yes
Toronto | Inactive User Report | Yes | No | Yes
Toronto | Mailbox Counts | Yes | No | Yes
Toronto | Meridian Mail Productivity | Yes | No | No
Toronto | Outcalling Activity Report | Yes | No | Yes
Toronto | SEER Query Report | Yes | No | Yes
Toronto | Top Users Of Storage Report | Yes | No | Yes
Toronto | User Directory | Yes | No | Yes
Toronto | Users Exceeding COS | Yes | No | Yes
Toronto | Voice Messaging Activity | Yes | No | Yes
Available Reports
System Status Reports
Traffic Reports
System Traffic Summary Report
Meridian Mail Productivity Report
Messaging Applications Reports
Voice Messaging Activity Report
Mailbox Counts
Messaging Usage Report
Call Answering/User Responsiveness Report
Mailbox Session Analysis
Inactive User Report
Top Users Of Storage Report
User Directory
Networking Reports

Sort Customization

In the Sorting Customization window, you can modify up to four sort criteria for a report.

The reports produced by MMRR follow a format that is defined in the report template. With sort options, you can modify the order in which report information sorts. You modify the Sort Key options where Sort Key #1 is the primary sort key, Sort Key #2 is the secondary sort key, and so on. The sort key options appear in a drop-down list, which provides different options for each report.

Figure 4-13
Sorting Customization window



Procedure 4-18
To sort an alert's or a report's information

1. In the Meridian Mail Reporter - Reports window, on the Customize menu, click Alert Palette or Report Palette.

The Alert Palette or Report Palette Customization window opens.

2. On the Options menu, click Sorting.

The Alert Palette or Report Palette Sorting Customization window opens.

3. Double-click the Custom Name column of the alert or report that you want to sort, and then type a name for the sorted alert or report.

4. Click one of the four Sort Key columns and from the drop-down list select the alert's or report's sorting criteria.

You can select up to four sort keys.

5. On the File menu, click Save.

6. On the File menu, click Close to return to the Meridian Mail Reporter - Reports window.

For example, the default sort order for the Disk Usage Monitor report is Date/Time. In order to create a report that is sorted by voice storage used (for example, to quickly identify the time and date where the usage is highest), view the drop-down list in Sort Key #1, set it to the % Voice option, save the change, and preview the modified report.

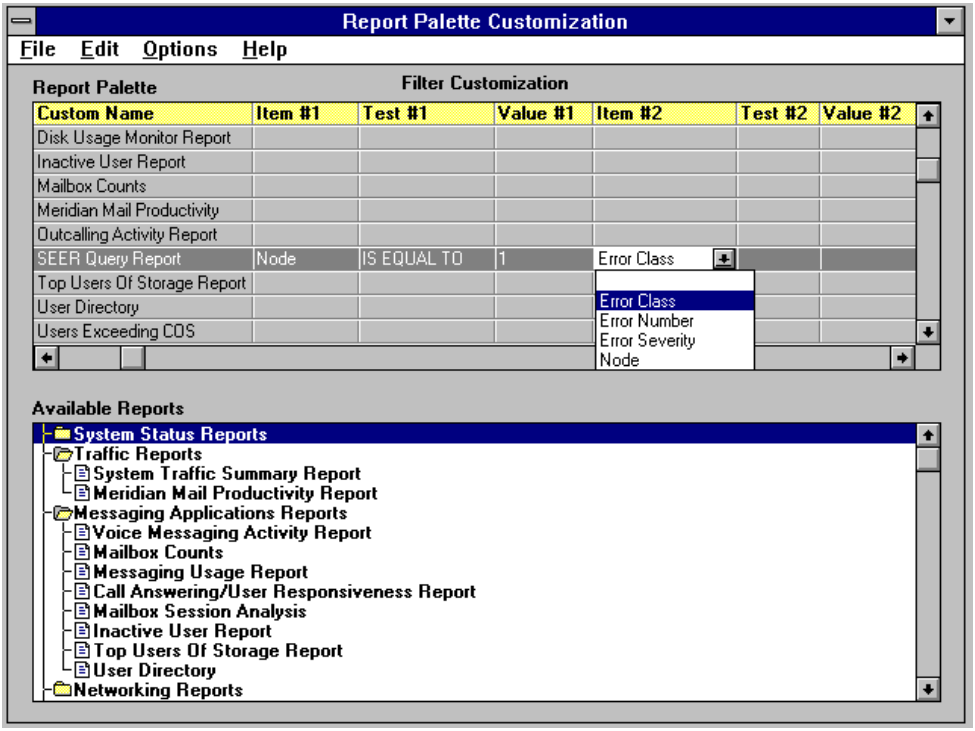
Filter Customization

In the Filter Customization window, you can modify up to four filter criteria for a report.

With filters, MMR Reports limits the scope of the data for the tabular form of a report. For example, by setting the filter for the Voice Mail Usage Bill-Back File to a particular department, the resulting report will only contain data for that department. Filters are not used for alerts since an alert has value by containing a fixed scope of data. After an alert is triggered, it can retrieve and show the exact set of data that exceeded the threshold.

Each report can have up to four filters. Each filter requires three parameters: an item, a test, and a value. For each report, the Item # drop-down list contains only the items applicable to the report. The Test # drop-down list provides operators such as IS EQUAL TO or IS LESS THAN. The Value # editable field contains the filter criteria.

Figure 4-14
Filter Customization window



Procedure 4-19
To set a report's filter parameters

1. In the Meridian Mail Reporter - Reports window, on the Customize menu, click Report Palette.

The Report Palette Customization window opens.

2. On the Options menu, click Filter.

The Report Palette Filter Customization window opens.

3. Double-click the Custom Name column of the report you want to filter, and then type a name for the filtered report.

4. Click the Item #1 column, and, from the drop-down list, select the report's filter parameter.

You can select up to four filter parameters.

5. Click the Test #1 column, and from the drop-down list, select the operator for testing the report's filter parameter.

You can select up to four operators.

6. Double-click the Value #1 column, and type the value for the filter parameter.

You can set up to four values.

7. On the File menu, click Save.

8. On the File menu, click Close to return to the Meridian Mail Reporter - Reports window.

For example, to limit the scope of the Voice Mail Usage Bill-Back File to Department 123, view the drop-down list in Item #1 and set it to the Department option. Next, view the drop-down list in Test #1 and set it to the IS EQUAL TO option. Finally, move the cursor to the Value #1 cell and type in **123**. The filter is now set so you can save the changes and preview the modified report.

Note: The data in the report must be within the scope defined by each of the individual filters. For example, setting the Channel IS GREATER THAN 8 and the Channel IS LESS THAN 20 in the tabular form of the Channel Problem Identification report for a 48-channel system, will include Channels 9 through 19 but will exclude channels 1 through 8 and channels 20 through 48.

Several data fields are stored in the OM database as strings; therefore, filters operating on these fields must be set accordingly. Filter operations like IS GREATER THAN, IS LESS THAN, and so on, work differently on strings than on numbers: the comparison is made on a character-by-character basis and the operation stops at the first difference. For example, since the Mailbox field is stored as a string, the filter Mailbox IS GREATER THAN 1234 will accept mailboxes 1235, 2000, and 999 since, as a string, 999 is greater than 1234. By the same token, this filter will not accept 10 000 since, as a string, 1234 is greater than 10 000.

MMR Reports stores most filter items as numbers which can be used intuitively with the filter tests. The following filter items are stored as strings:

Billing DN
Call Type
Called DN
Channel DN
Department
Mailbox
Name
Successful Delivery
Target DN
VSDN

All but one of the Test operators are comparative functions (that is, IS EQUAL TO, IS GREATER THAN, IS GREATER THAN OR EQUAL TO, IS LESS THAN, IS LESS THAN OR EQUAL TO, IS NOT EQUAL TO). The IS LIKE test allows for pattern searching of character strings. Use the wild card symbols ? and * to stand for variable characters. The ? stands for a single character; the * stands for any number of characters. For example, on a Meridian Mail system with 4-digit mailboxes, the filter Mailbox IS LIKE 20* will accept mailboxes 2000 through 2999. Note that the IS LIKE operator will not work with items that are stored as numbers.

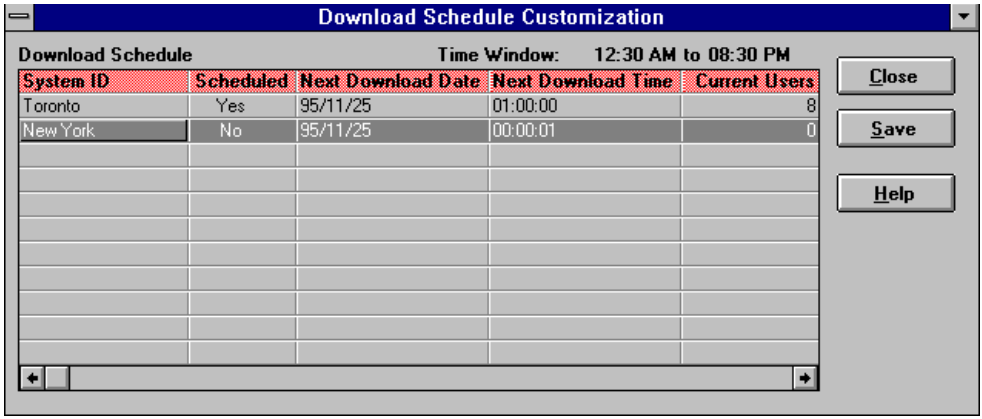
Download Schedule Customization

The download schedule is automatically created during the installation of MMR. For single site configurations, you do not need to customize the download schedule. For multisite configurations, you need to customize this schedule only under very special circumstances. The following sections describe the download schedule and when to alter it.

Procedure 4-20
To open the Download Schedule Customization window

- In the Meridian Mail Reporter - Reports window, on the Customize menu, click Download Schedule.

Figure 4-15
Download Schedule Customization window



During installation of a multisite configuration, MMR Setup produces a download schedule starting at the beginning of the 20-hour Download Time Window (which defaults to 00:15 a.m.). The schedule is based on download estimates for transferring the binary files from each Meridian Mail system as well as a 30% allowance for the processing that takes place after the files have been transferred (that is, purging, file conversion, and table cleanup). Downloads occur according to the order in which System IDs appear in the Meridian Mail Reporter - Setup window.

Note: If there is a preference in the download schedule order, make sure that you enter the sites in the preferred order during installation in order to avoid the need for subsequent customization of the download schedule.

You must customize the download schedule if

- you add new sites to the configuration through MMR Setup
- you change a system's configuration from regular to SEER only, or from SEER only to regular
- additional users and ports substantially increase the activity on one or more Meridian Mail systems
- several Meridian Mail sites are in different time zones

To customize the download schedule, you must understand its structure and how to determine the next download time.

The table in the Download Schedule Customization window contains one row for each Meridian Mail system in the configuration. Each row identifies the following:

- **System ID -** the site name
- **Scheduled** - whether or not the site is included in the download schedule
- **Next Download Date -** the date of the upcoming download
- **Next Download Time -** the time of the upcoming download
- **Current Users -** the number of actual users on the Meridian Mail system
- **Configured Users -** the number of users in the Meridian Mail Systems table in the Meridian Mail Reporter - Setup window
- **Last Download -** the actual time required to complete the last download
- **Estimated Download -** the estimated time in the Meridian Mail Systems table in the Meridian Mail Reporter - Setup window
- **Max Download -** the maximum time ever taken to complete a download
- **SEER Only** - whether or not only the SEER file downloads

  Note: To download only the SEER file for a Meridian Mail system, you must specify both the number of Ports and Users for that system as 0 in the Meridian Mail Systems Table of the Meridian Mail Reporter - Setup window.

Next Download Time

When you add an additional system using MMR Setup, the system appears as a new row at the bottom of the Download Schedule table; however, the Scheduled column contains No, the Next Download Date column is set to the following day, and the Next Download Time column is set to midnight (00:00). You must calculate the next download time.

Procedure 4-21
To calculate the next download time

1. In the Download Schedule Customization window, average the preceding system's Estimated Download and Max Download.

2. Multiply the average by 1.3.

3. Add the product of Step 2 to the preceding system's Next Download Time.

4. In the new system's Next Download Time column, type a time which is greater than the sum of Step 3.

5. In the new system's Next Download Date column, type a date which corresponds with the time.

6. In the new system's Scheduled column, select Yes.

7. Click Save.

For example, if the Estimated Download of the last scheduled download was 2.5 hours and the Max Download for the same site was 1.5 hours, the average is 2 hours and the overall duration of the download, including the 30% allowance, is 2 x 1.3 = 2.6, or 2 hours and 36 minutes. If the Next Download Date and Next Download Time of the last scheduled download is January 2nd at 03:00 a.m.; then, the Next Download Date and Next Download Time for the new system can be no earlier than January 2nd at 05:26 a.m.

Note: The Download Schedule table's rows sort in the order of the download sequence. Consequently, any changes made to the Next Download Time or Next Download Date columns that affect the sequence will cause the Download Schedule to instantly resort itself.

Saving validates that no conflicts exist in the new schedule. Specifically, validation ensures that sufficient time is allowed between downloads and that all download operations complete within the 20-hour Download Time Window. Once the new download schedule has been validated, you can close the Download Schedule Customization window.

SEER-only and Regular System Changes

Changing a Meridian Mail system after installation from SEER only to regular, or to regular from SEER only, requires you to check the download schedule for conflicts. You must check the download schedule because downloading from a

SEER-only system takes less time than downloading from a regular system. Consequently, the lesser or greater amount of download time required for a changed system could affect other systems' already scheduled downloads.

Procedure 4-22
To check the download schedule for conflicts

1. In the Download Schedule Customization window, click Save.

If conflicts exist, a Download Conflict dialog box appears. If no conflicts exist, the dialog box does not appear; therefore, go to Step 8.

2. Click OK.

3. Click the System ID column heading and while the column is selected, drag it beside the Next Download Time column.

4. Click the Estimated Download column heading and while the column is selected, drag it the other side of the Next Download Time column.

5. For the system which will miss a download because of conflicts, perform Steps 1 through 5 of Procedure 4-21, "To calculate the next download time."

6. Click Save.

7. If the Download Conflict dialog box appears, return to Step 2.

8. Click Close.

Increased Meridian Mail Activity

If activity at one of the existing Meridian Mail systems substantially increases after installation, the time required to download the files will increase, and the download operation could collide with the next scheduled download. If you do not adjust the Download Schedule beforehand, a collision will cause a download to miss. Even though a message will appear in the MMR Communications Critical Error window to flag the collision, you should avoid the collision entirely by adjusting the Download Schedule after the users and ports are added to the Meridian Mail system. Open MMR Setup and increase the number of ports in the Meridian Mail Systems table; then, launch MMR Reports and adjust the download schedule.

Note: If you anticipate growth on only one Meridian Mail system in a multisite configuration, make sure it is the last system in the Meridian Mail Systems table so that even if the download time increases, it will not collide with another download.

Multiple Time Zones

When MMR Setup produces the download schedule during installation, it starts the first download at the default start time for the Download Time Window (which is 00:15 a.m.) and schedules each download to take place immediately after the preceding download completes the critical part of its download. The download schedule is set up this way because the ideal time to download is shortly after midnight (since the OM data that is transferred always ends on a midnight boundary). While this approach is effective when all of the Meridian Mail systems are in the same time zone, a different approach is needed if the systems are in different time zones.

The key consideration in planning for a multisite configuration in multiple time zones is that the OM data from each Meridian Mail system will reflect the local time of the system. For example, at 08:00 p.m. in New York, a Meridian Mail system located in London (which is 5 hours ahead of New York) will have OM data that is time stamped at 01:00 a.m. on the following day. So, if the MMR PC were located in New York and one of the Meridian Mail sites was in London, the download could be scheduled at 08:00 p.m. New York time and still pick up the latest day of OM data from London. Conversely, if a second Meridian Mail system were located in San Francisco (which is 3 hours behind New York), it would be important not to schedule a download before 03:00 a.m. New York time in order to ensure that the latest day's worth of OM data was collected from the San Francisco site.

The simplest way to create a download schedule for a multisite configuration in multiple time zones is to ensure that the sites are entered into MMR Setup in the order in which they reach midnight and, after MMR is installed, manually calculate the most appropriate download times and customize the download schedule.

Note: You may need to move back the Download Time Window start time in order to accommodate sites that are several hours ahead of the time zone in which the MMR PC resides. For example, if the PC were located in New York and a Meridian Mail site were located in London, the Download Time Window start time could be set to 08:00 p.m. Use MMR Setup to set the start time.

Backup

On a regular basis, you should back up the MMR system and OM databases. Since MMR does not offer a backup feature, use an off-the-shelf backup program such as Norton Backup for Windows to save data onto disks, tapes, or other drives.

***Note*:** If you use a scheduled backup, please make sure that the backup schedule does not overlap with any MMR activity such as a download or report generation.

Tips for Backing up MMR

- Please follow the instructions for the corresponding backup program.
- Terminate any MMR program which is running.
- Include the following files and directories in the backup: REPORTER\MMR.INI, REPORTER\DATABASE\MMR_SYS.MDB, and all subdirectories (and contents) under \REPORTER\DATABASE.

Tips for Restoring MMR

- Please follow the instructions for the corresponding backup program.
- Terminate any MMR program which is running.
- If you restore a database from MMR Release 1.0 or 1.01, you must convert the database to Release 2.0 by using MMR Upgrade. For more information, see the following "MMR Upgrade" section.
- After restoring the files, start MMR Reports and manually update the download schedule. Most likely, the backup contains an earlier image of the system database, and the Next Download Date and Next Download Time are in the past. If you do not update the download schedule, MMR Communications will generate one error for each site which misses a download.

Other Functions of MMR Reports

You can use MMR Reports for maintenance such as importing downloaded files, setting an after-hours interval, and viewing the database date range. To learn how to perform these tasks, please refer to the online help.

MMR Loader

Since MMR Loader restarts MMR on a daily basis, you need to understand when MMR Loader runs, what it does, and how it works with the other MMR components.

By restarting MMR on a daily basis, MMR Loader performs a global memory compact operation to eliminate memory fragmentation. MMR Loader automatically attempts to restart MMR at 10 minutes before the beginning of the Download Time Window. Both MMR Communications and MMR Reports must be idle (for example, not downloading) for MMR Loader to restart MMR. MMR Loader presents the MMR Shutdown dialog box and attempts to restart MMR for a period of 5 minutes.

Figure 4-16
MMR Shutdown dialog box

MMR Shutdown
Meridian Mail Reporter will now shutdown, then restart.
Press Cancel Shutdown if you want to cancel the shutdown process and continue working with Meridian Mail Reporter.
Shutdown in: 8 seconds
Cancel Shutdown

The MMR Shutdown dialog box appears 15 seconds before MMR Loader restarts MMR, and gives you an opportunity to cancel the shutdown process.

Procedure 4-23
To cancel MMR shutdown

- In the MMR Shutdown dialog box, click Cancel Shutdown.

If you do not cancel the process, the dialog box automatically closes after 15 seconds, all running MMR components terminate, and MMR Communications restarts. MMR Communications launches MMR Loader and then terminates. Only MMR Communications can launch MMR Loader. During operation, MMR Loader terminates all other running MMR components. After MMR Loader performs its

operation, it restarts MMR Communications and terminates, leaving only MMR Communications running.

MMR Upgrade

You use MMR Upgrade for only two purposes: to upgrade an older release of MMR during installation, and to convert a restored database created with MMR Release 1.0 or 1.01.

During installation, if MMR detects an older release on the hard drive, it notifies you by showing the Detection screen. Clicking Continue in the screen starts MMR Upgrade, a database conversion program. MMR Upgrade converts Release 1.0 or 1.01 of MMR to Release 2.0. As well, MMR Upgrade notifies you if the conversion is successful.

After installation, you must use MMR Upgrade only if you restore a database created with MMR Release 1.0 or 1.01. MMR Upgrade converts the database to Release 2.0.

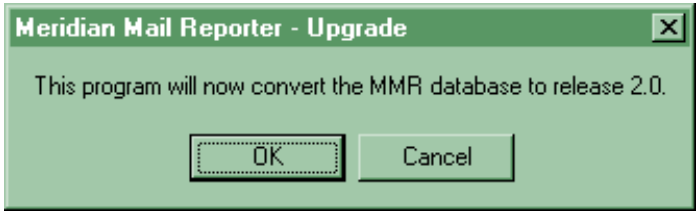
Procedure 4-24
To convert a restored database created with an earlier release

1. Use File Manager or Explorer to locate mmru.exe in the Reporter directory.

2. Double-click mmru.exe.

The Meridian Mail Reporter - Upgrade dialog box appears.

Figure 4-17
Meridian Mail Reporter - Upgrade dialog box



3. Click OK.

MMR Upgrade converts the database.

Guidelines for Operating MMR

The following sections provide specific guidelines for operating MMR.

All programs

To avoid contention for the system database, MMR Setup cannot run simultaneously with MMR Communications or MMR Reports.

MMR Setup

MMR Setup captures and validates MMR configuration. Consequently, MMR Setup will not save configuration data until it meets the following criteria:

- The aggregate disk space required is less than 550 Mbytes.
- The aggregate disk space required is less than the disk space available.
- The aggregate download time is less than 20 hours.
- The OM password field is filled (single- or multisite configuration).
- The Dial column is filled (multisite configuration).
- The Ports column is filled (single- or multisite configuration).
- The Users column is filled (single- or multisite configuration).

MMR Setup will automatically start in view mode (you can view but not modify the configuration information) if either MMR Communications or MMR Reports is already running.

MMR Communications

Following the installation of MMR, the addition of a new site, or a modification to the Dial or OM Password fields, MMR Communications checks the connection to all affected sites by requesting the size estimate for one of the files. This test validates that the connection can be made (that is, that the system can be reached, the packet protocol can be established, and the OM password is valid).

MMR Reports

MMR Reports executes four steps in the daily download processing: purging the oldest day of data, converting binary files to ASCII, deleting the three tables that are replaced daily, and, finally, merging the newest day of data into the OM

database. The following are some notes on the implications of this process and how MMR Reports handles special circumstances that may arise from time to time.

Monitoring the download's progress

The time the download process takes depends on the amount of data to transfer, the size of the OM database, and the power of the CPU. MMR Reports provides a message box to explicitly indicate that the process is underway and to monitor its progress during the first three phases. The Database Activity field in the Meridian Mail Reporter - Communications window monitors the progress of the final (merge) phase. When the merge completes, the Database Activity field changes to Idle, and a message appears in the log file that the download was successful.

Using MMR Reports during a download

The purge, file conversion, and table cleanup require that the database is locked. Therefore, during the processing, you cannot use MMR Reports nor schedule a file transfer to start. Since the download process is usually scheduled at night, not using MMR Reports during that time should be fairly convenient. It is also recommended that you do not use MMR Reports to retrieve reports during a merge: if a report interval spans over the merging data, the report will contain incomplete information. Furthermore, any user interaction with MMR Reports during the merge phase will slow down the merge process.

MMR Communications could transfer files during the merge process; however, this is not recommended since using MMR Communications increases the CPU's load, and, if the CPU is not powerful enough, the file transfer will fail.

Working with replaced tables

MMR Reports replaces three tables with each download: the User Directory, the Class of Service Definition, and the Voice Service DN (VSDN). Consequently, if a user is deleted from the Meridian Mail system, she or he will no longer appear in the OM database as soon as the updated directory is transferred to the MMR PC. Any records in the OM database that refer to the user will not appear in reports since the OM database must maintain referential integrity. Importantly, a bill-back file produced on a weekly or monthly basis would not include records for the deleted user if he or she was deleted from the directory between reports.

To deal with such a situation, you could create bill-back files on a daily basis, ensuring that all user activity is captured. As well, you could disable the user's mailbox but keep him or her defined as a user on Meridian Mail until the bill-back file produces; then, delete the user from the Meridian Mail system.

Dealing with missed data

From time to time, a file transfer may fail and you may need to perform an immediate download to retrieve the missed data. If the immediate download transfers data which already exists in the OM database, MMR Reports' merge process discards the overlapping data.

From time to time, the transfer of data may cease for several days. Since the Meridian Mail system keeps data only for two days, the missed data may no longer be available, creating a gap in the database when the transfer of data resumes. Even if reports do not contain data for the missing days, MMR Reports does not feel the effect. An implication of having a gap in the OM database is that the difference between the first and last day of data will appear greater than the number set for Days in Database. This situation will correct itself as soon as the gap works its way through the database.

Closing dialog boxes

Please do not leave modal dialog boxes open in MMR Reports. Importantly, whenever you open a modal dialog box in MMR Reports, all processing stops and resumes only after you close the dialog box. If you leave a dialog box open for an extended period of time (for example, overnight or even days), the download process will start only after you close the dialog box. Consequently, binary files from previous downloads may be overwritten (that is, lost) before MMR Reports can merge them into the OM database.

Closing the program

Due to a limitation with one of MMR Reports' libraries, you cannot terminate MMR Reports while MMR Communications is running. Before terminating MMR Reports, check that the Link Activity field in the Meridian Mail Reporter - Communications window is Idle; then, close MMR Communications, close MMR Reports, and relaunch MMR Communications.

Using Online Help

The following sections explain what information you can find in Meridian Mail Reporter (MMR) Help, and details how you can access and navigate through the information. If you installed MMR under Windows 95, you need to read the section about using Windows 95 Help. If you installed MMR under Windows 3.1 or Windows NT, you need to read the section about using Windows 3.1 Help.

Why MMR Help is helpful

MMR Help explains how to use MMR Setup, MMR Reports, and MMR Communications by providing both procedural and referential information. The procedural information describes how to perform certain tasks (for example,

scheduling alert and report printing), within each MMR program; the referential information describes the programs' windows, dialog boxes, and commands. Most important, MMR Help gives you the information you need when you need it. You can access MMR Help both from within each of the MMR programs and from the MMR Program Group.

Before you begin

You should know the following three terms so you can locate where you are in MMR Setup, MMR Reports, or MMR Communications:

- Main window refers to the Meridian Mail Reporter - Setup, Reports, or Communications window.
- Secondary window refers to a window accessed from a main window's menu.
- Dialog box refers to a box which appears to give program options.

Using Windows 95 Help

The look and feel of Windows 95 Help differs from Windows 3.1 Help. Read this section to learn about the structure of MMR Windows 95 Help. As well, this section explains how to access the help. Because you can navigate through Windows 95 Help quite easily once accessing it, you do not find many topics in this section that appear in the Windows 3.1 Help section. Also, fitting with the Windows 95 style, the instructions in this section have a different style.

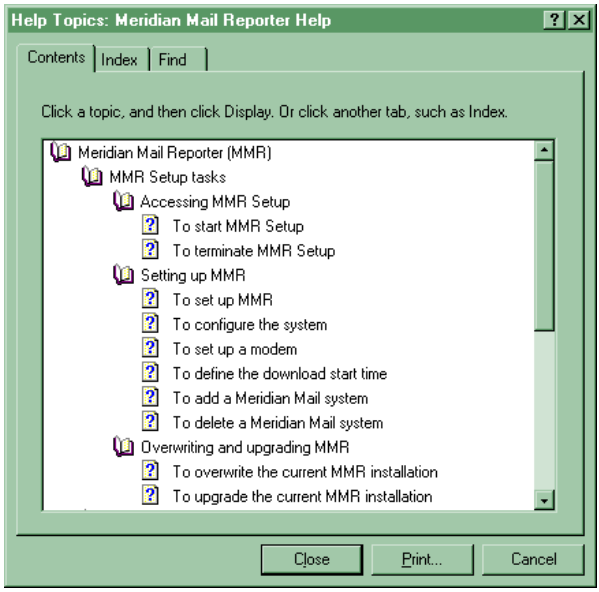
How MMR Help is structured

Before you learn how to access MMR Help, you should understand its structure. With its book hierarchy, the table of contents for the Windows 95 version of MMR Help lets you navigate through all topics easily. Figure 4-18 shows a sample table of contents. By simply looking at the contents, you can see all of the help topics. The procedural topics, or the how to topics, appear at the top of the table of contents; therefore, you can easily locate these topics when you need to know how to perform a task. As well, the contents separates procedural and referential topics. Referential topics, which provide glossary information like button descriptions, appear at the bottom of the table of contents.

How you access MMR Help

Now that you understand MMR Help's structure, you need to learn how to get to its information. How you access MMR Help depends on where you are in MMR Setup, MMR Reports, or MMR Communications. As well, you can access MMR Help from Windows 95 when none of the MMR programs is running.

Figure 4-18
Table of Contents for MMR Windows 95 Help


Help Topics: Meridian Mail Reporter Help
Contents
Index
Find
Click a topic, and then click Display. Or click another tab, such as Index.
Meridian Mail Reporter (MMR)
MMR Setup tasks
Accessing MMR Setup
To start MMR Setup
To terminate MMR Setup
Setting up MMR
To set up MMR
To configure the system
To set up a modem
To define the download start time
To add a Meridian Mail system
To delete a Meridian Mail system
Overwriting and upgrading MMR
To overwrite the current MMR installation
To upgrade the current MMR installation
Close
Print...
Cancel

Procedure 4-25
To access MMR Help while in a main window

1. On the Help menu, click Contents.

The Contents command brings up a topic window that instructs you to click the window's Contents button.

2. Click Contents.

The table of contents for MMR Help appears.

or

- Press <F1>.

The F1 key takes you to a topic in MMR Help which describes exactly where you were in the respective MMR program. For example, if you click Help in the Immediate Download window of MMR Reports, you open the MMR Help topic which explains that very window. This functionality is called online or context-sensitive help.

Procedure 4-26
To access MMR Help while in a secondary window or a dialog box

- Click Help.

or

- Press <F1>.

The Help button or the F1 key takes you to a topic in MMR Help which describes exactly where you were in the respective MMR program. For example, if you click Help in the Immediate Download window of MMR Reports, you open the MMR Help topic which explains that very window. This functionality is called online or context-sensitive help.

Procedure 4-27
To access MMR Help while in Windows 95

1. Click Start, and then point to Programs.
2. Point to Meridian Mail Reporter.
3. Click MMR Help.

The table of contents for MMR Help appears.

Knowing how to access the table of contents provides you with the ability to access all of MMR Help's information. Because you understand the help's structure, you can easily navigate through the information.

Using Windows 3.1 Help

Windows 3.1 Help looks and feels different from Windows 95 Help.
Read this section to learn about the structure of MMR Windows 3.1 Help. As well, this section explains how to access and navigate through the help. Because of MMR Windows 3.1 Help's unique structure, you find more topics in this section. Many of the topics describe navigating through the help's information structure. Also, this section offers a tutorial. The instructions in this section follow the same style as the Windows 3.1 online help.

How MMR Help is structured

Before you learn how to access MMR Help and navigate through its information, you should understand its structure. Figure 4-19 shows MMR Help's information structure. Each rectangle in the figure represents a topic. Topics build on and provide links to each other. Each level of topics provides a different type of information.

At the top of Figure 4-19, the Meridian Mail Reporter Help topic appears. From this topic, a high-level table of contents, you can access each of the five main topics: Overview of MMR, MMR Setup, MMR Reports, MMR Communications, and Troubleshooting.

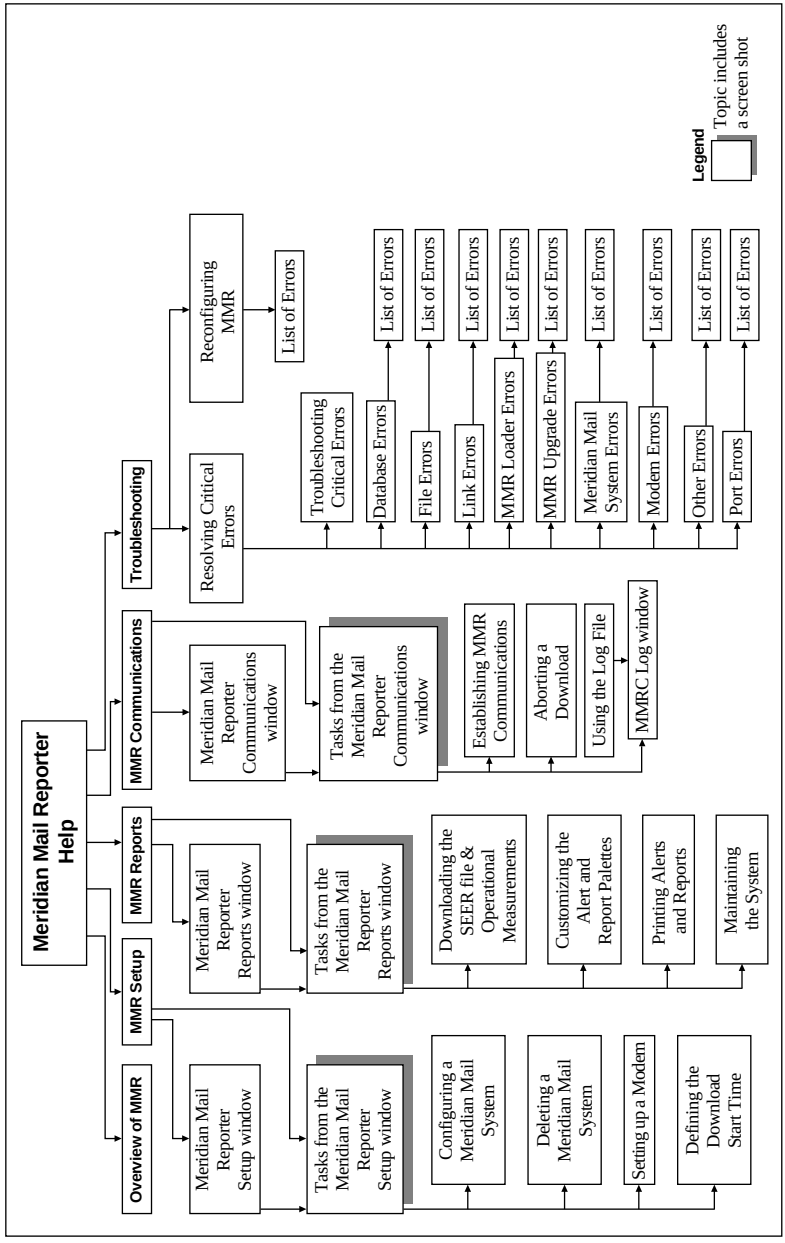
Located at the first level of Figure 4-19, the main topics provide overview information. Overview of MMR describes the program as a whole, the three program themselves, and how the programs work together. Each of MMR Setup, MMR Reports, and MMR Communications explains the respective program and the tasks that you can perform in that program's main window. Troubleshooting lists the two main troubleshooting areas. These main topics give you access to both procedural and referential information.

At Figure 4-19's second level, the following topics appear:

- Meridian Mail Reporter - Setup window
- Meridian Mail Reporter-Reports window
- Meridian Mail Reporter - Communications window
- Resolving Critical Errors
- Reconfiguring MMR

The latter two topics represent the main areas of Troubleshooting. Both the critical errors topic and the reconfiguring topic provide access to specific error messages. In Figure 4-19, the List of Errors rectangle appears frequently. Each rectangle represents a topic which lists errors particular to an error type. Clicking on a listed error takes you to its topic, which describes the possible reason for the problem and solution(s). All the window topics, such as Meridian Mail Reporter - Setup window, provide referential information: they describe the parts of each program's main window.

Figure 4-19
Meridian Mail Reporter Help Structure



The third level of Figure 4-19 contains topics which give access to procedural information. Tasks from the Meridian Mail Reporter - Setup window, Tasks from the Meridian Mail Reporter - Reports window, and Tasks from the Meridian Mail Reporter - Communications window list specific procedures. For example, from the Tasks from the Meridian Mail Reporter - Setup window topic, the following procedural topics stem: Configuring a Meridian Mail System, Deleting a Meridian Mail System, Setting up a Modem, and Defining the Download Start Time. Therefore, procedural topics describe how to perform tasks. By looking at Figure 4-19, you can discover the procedural topics for all the MMR programs.

Understanding MMR Help's information structure helps you understand the following information presented in this chapter.

How you access MMR Help

Now that you understand MMR Help's structure, you need to learn how to get to its information. How you access MMR Help depends on where you are in MMR Setup, MMR Reports, or MMR Communications. As well, you can access MMR Help from Windows Program Manager when none of the MMR programs is running.

Procedure 4-28
To access MMR Help while in a main window

- Highlight the Help menu and select the Contents command.

The Contents command positions you at MMR Help's Contents, the first topic of MMR Help. This topic, like a book's high-level table of contents, shows you MMR Help's five main topics.

or

- Press the F1 key.

The key takes you to a topic in MMR Help which describes exactly where you were in the respective MMR program. For example, if you click on the Help button in the Immediate Download window of MMR Reports, you open the MMR Help topic which explains that very window. This functionality is called online or context-sensitive help.

Procedure 4-29
To access MMR Help while in a secondary window or a dialog box

- Click on the Help button

or

- Press the F1 key.

The Help button or the F1 key takes you to a topic in MMR Help which describes exactly where you were in the respective MMR program. For example, if you click on the Help button in the Immediate Download window of MMR Reports, you open the MMR Help topic which explains that very window. This functionality is called online or context-sensitive help.

Procedure 4-30
To access MMR Help while in Program Manager

- Double-click on the question mark icon in the Meridian Mail Reporter program group.

The question mark icon positions you at MMR Help's Contents, the first topic of MMR Help. This topic, like a book's high-level table of contents, shows you MMR Help's five main topics.

How you find MMR Help's information

Now that you know how to access MMR Help, you need to learn how to find its information. Most likely, you want to learn how to use MMR. You can access procedural and referential information for MMR Setup, MMR Reports, and MMR Communications.

You should know the following two terms before trying to find information:

- **Jump** appears in topics as green text underlined with a solid green line. A jump takes you to another topic in MMR Help.

- **Popup** appears in topics as green text underlined with a broken green line. A popup opens as a smaller window within the current window. To close the smaller window, click outside of it.

How you find procedural information

You require procedural information to learn how to perform tasks in MMR Setup, MMR Reports, and MMR Communications. Tasks are divided into subtasks. For example, printing a report is a task, and one of its subtasks is defining the report's output parameters.

Procedure 4-31
To find MMR Setup tasks

1. Access MMR Help.

2. If you are not at MMR Help's Contents, click on the Contents button at the top left-hand corner of the MMR Help window. Otherwise, go to step 3.

3. Click on the MMR Setup icon to go to the MMR Setup topic.

4. Click on the Tasks jump in the first paragraph or click on the check box icon at the bottom of the window to go to the Tasks from the Meridian Mail Reporter - Setup window topic.

5. Click on one of the jumps.

Procedure 4-32
To find MMR Reports tasks

1. Access MMR Help.

2. If you are not at MMR Help's Contents, click on the Contents button at the top left-hand corner of the MMR Help window. Otherwise, go to step 3.

3. Click on the MMR Reports icon to go to the MMR Reports topic.

4. Click on the Tasks jump in the first paragraph or click on the check box icon at the bottom of the window to go to the Tasks from the Meridian Mail Reporter - Reports window topic.

5. Click on one of the jumps.

Procedure 4-33
To find MMR Communications tasks

1. Access MMR Help.

2. If you are not at MMR Help's Contents, click on the Contents button at the top left-hand corner of the MMR Help window. Otherwise, go to step 3.

3. Click on the MMR Communications icon to go to the MMR Communications topic.

4. Click on the Tasks jump in the first paragraph or click on the check box icon at the bottom of the window to go to the Tasks from the Meridian Mail Reporter - Communications window topic.

5. Click on one of the jumps.

How you find referential information

You require reference information to help you perform tasks. For example, to enter information in a field, you need to know the information's format. MMR Help provides reference information about MMR's windows, dialog boxes, and menu commands.

Procedure 4-34
To find information about a main window

Use this procedure from within a main window.

1. Press the F1 key.

2. If the "Help topic does not exist" dialog box appears, see Procedure 4-36, "To search for information."

Procedure 4-35
To find information about a secondary window or a dialog box

Use this procedure from within a secondary window or a dialog box.

1. Click on the Help button.
or
Press the F1 key.

2. If the "Help topic does not exist" dialog box appears, see Procedure 4-36, "To search for information."

Procedure 4-36
To search for information

Note: The Help button in a secondary window or dialog box guarantees that context-sensitive help exists for that window or box. No Help button in a secondary window or dialog box often means that no context-sensitive help exists for that window or box. However, you still can press the F1 key to see if context-sensitive help exists. If context-sensitive help does not exist, the "Help topic does not exist" dialog box appears. You still can get information, although not context-sensitive help, about the window or box by searching for it.

Use this procedure from the "Help topic does not exist" dialog box.

1. Click on the OK button.

2. Click on the Search button to open the Search dialog box.

3. Type the secondary window's or the dialog box's name in the field where the insertion point appears.

4. Click on the Show Topics button.

5. Click on the topic in the list box which represents the window or the dialog box.

6. Click on the Go To button to open the correct topic.

Procedure 4-37
To find information about a menu command

Use this procedure from MMR Setup, MMR Reports, or MMR Communications.

1. Highlight the menu that contains the command for which you want information.

2. Select the command and while selecting it, press the F1 key. MMR Help opens at the topic about the command.

How you navigate through MMR Help's information

Now that you know how to find MMR Help's information, you need to learn how to navigate through it. Buttons and menu commands help you use MMR Help.

Buttons

You can use the following buttons, always located at the top left-hand corner of the MMR Help window, to navigate through MMR Help's information:

- **Contents** Clicking on this button takes you to MMR Help's first topic.

- **Search** Clicking on this button opens the Search dialog box. To find out how to use the Search function, see Procedure 4-36, "To search for information" (from Step 3 on).

- **Back** Clicking on this button returns you to the topic that you viewed before the current one.

- **History** Clicking on this button displays a dialog box which lists the last 40 topics that you viewed in the Windows session. The most recent topic appears first. Double-click on a topic to return to it.

- << Clicking on this button displays the previous topic in MMR Help.

- >> Clicking on this button displays the next topic in MMR Help.

Menu Commands

A Help menu appears in all of the MMR programs' main windows and in the MMR Help window. The commands in the Help menu both help you navigate through information and give you information about using MMR Help, called Help on Help.

You can use the following commands from the Help menu in the MMR programs' main windows to navigate through information and get Help on Help:

- **Search for Help On** Selecting this command opens MMR Help with the Search dialog box in the foreground. To find out how to use the Search function, see Procedure 4-33, "To search for information" (from Step 3 on).

- **How to Use Help** Opens How to Use Help which explains in detail how to use Windows help files like MMR Help.

You can use the following command from the Help menu in the MMR Help window to get Help on Help:

- **How to Use Help** Opens How to Use Help which explains in detail how to use Windows help files like MMR Help.

Tutorial

Now that you know how to access MMR Help and find and navigate through its information, you should practise these tasks. The following tutorial takes you through a scenario in which you use MMR Help.

While in the Meridian Mail Reporter - Setup window to configure a Meridian Mail system, you get confused about what information you should type in the OM Password field of the Meridian Mail Systems table. You decide to get some help about the window.

1. Click on the Help button located in the window's bottom right-hand corner.

MMR Help opens at the Meridian Mail Reporter - Setup window topic. Two graphics of the window appear within the topic.

2. Click inside the broken line box around the OM Password field on the graphic.

A popup about OM Password opens and explains what information you should enter in the field.

Eager to enter the correct information in the OM Password field, you decide to exit MMR Help.

3. Highlight the File menu and select the Exit command.

MMR Help closes and you return to the Meridian Mail Reporter - Setup window.

Back in the Meridian Mail Reporter - Setup window, you complete adding the Meridian Mail system's information. Only when you finish do you realize that you added the wrong system. You realize that you need information about how to delete the system.

4. Press the F1 key.

MMR Help opens at the Meridian Mail Reporter - Setup window topic. Two graphics of the window appear within the topic.

Having read the "Using MMR and its Online Help" chapter, you instantly realize that you need procedural information rather than the currently displayed referential information. You know that you have to get to MMR Setup tasks.

5. Click on the Contents button located in the window's top left-hand corner.

MMR Help displays its first topic, titled Meridian Mail Reporter 1.0 Help.

6. Click on the icon for MMR Setup.

MMR Help displays the MMR Setup topic.

7. Click on the Tasks jump in the first paragraph.

MMR Help displays the Tasks from the Meridian Mail Reporter - Setup window topic.

8. Click on the Deleting a Meridian Mail System jump.

MMR Help displays the Deleting a Meridian Mail System topic.

Thrilled with the helpful information, you intently read the procedure described. Afraid that you may forget the whole procedure, you decide to leave MMR Help running so you can return to it easily from the Meridian Mail Reporter - Setup window.

9. Press the Alt key and while holding it, press the Tab key until Meridian Mail Reporter appears in the dialog box.

You return to the Meridian Mail Reporter - Setup window.

Just before the last step of deleting, you forget what you have to do next. Somewhat annoyed at your poor memory, you decide to return to MMR Help.

10. Press the Alt key and while holding it, press the Tab key until Meridian Mail Reporter Help appears in the dialog box.

You return to MMR Help at the Deleting a Meridian Mail System topic.

You finish reading the procedure. Having committed it to memory, you decide to browse through some other topics before exiting MMR Help.

11. Click on the << button located in the window's top left-hand corner to see the previous topic in MMR Help.

Each time you click on the button, you go back one topic.

or

12. Click on the >> button located in the window's top left-hand corner to see the next topic in MMR Help.

Each time you click on the button, you go forward one topic.

You decide you must pull yourself away from MMR Help and all its interesting topics to finish deleting that system.

13. Highlight the File menu and select the Exit command.

Back in the Meridian Mail Reporter - Setup window, you finishing deleting the wrongly inputted system. Moments later, your coworker appears and apologetically informs you that he gave you the wrong Meridian Mail system information. In fact, you should have kept the system that you just deleted.

He runs out of the room before you can say what is on your mind.

You sigh and realize that you really need help now. Attempting to calm yourself down, you think that you should check in MMR Help about undeleting a system. You are still in the Meridian Mail Reporter - Setup window.

14. Click on the Help button located in the window's bottom right-hand corner.

MMR Help opens at the Meridian Mail Reporter - Setup window topic. Two graphics of the window appear within the topic.

15. Click on the Search button located in the window's upper left-hand corner.

The Search dialog box appears with the insertion point flashing in the first field.

16. Type **undeleting** in the field.

The closest alphabetical topic match appears in the upper list box: turning off the red MMR Reports icon.

You sigh again. Because MMR Help lists all the possible tasks you can do with the MMR programs and does not include undeleting, you realize that you cannot undelete a system.

You decide to exit MMR Help and return to the Meridian Mail Reporter - Setup window to add the system for the second time. At least you know what to enter in the OM Password field.

17. Click on the Cancel button in the Search dialog box.

The Search dialog box closes.

18. Highlight the File menu and select the Exit command.

MMR Help closes.

Chapter 5: Alerts

Overview

Alerts are highly focused reports which use performance metrics to analyze system operation for signs of problems with the system's hardware, applications, and security. Should a potential problem be detected, alerts flag the administrator's attention through a beeping tone which is emitted twice a second until the MMR Reports application is maximized; the triggered alert is highlighted in red.

Alerts are not real-time based; instead, they analyze the previous day's Operational Measurement data for problems. They are typically calculated each morning prior to the arrival of the administrator and provide a quick way to check for any conditions requiring attention. Alerts stay red until they are cleared using the Clear Alert command in the Maintenance pull-down menu (or by pressing the F5 key).

The default interval for viewing an alert is one day since, under usual circumstances, an alert should be viewed and cleared at least once a day. If an alert is triggered and not cleared within a day, the default interval for viewing the alert increases until the alert is cleared.

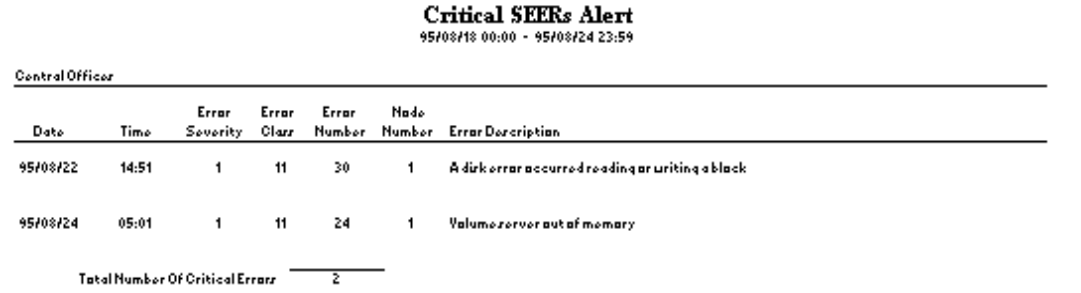
For example, if the Excessive Failed Logons Alert goes into alert status, it indicates that, in the past 24 hours, there were more failed logons than the threshold value. This may mean that hackers have been probing the Meridian Mail system's mailboxes.

SEER Alert

Critical SEERs Alert

This alert is used to identify critical problems within Meridian Mail. The Critical SEER Alert report is triggered when any critical SEER is recorded since the last scheduled download. The report is sorted by date/time.

Figure 5-1
Critical Seers Alert



Critical SEERs Alert
95/08/18 00:00 - 95/08/24 23:59

Central Officer

Date	Time	Error Severity	Error Class	Error Number	Node Number	Error Description
95/08/22	14:51	1	11	30	1	A disk error occurred reading or writing a block
95/08/24	05:01	1	11	24	1	Volume server out of memory

Total Number Of Critical Errors 2

Displayed Report Fields

Date/Time: The date and time that the SEER was reported.

Error Severity: The errors presented are either Critical Errors (1) or Critical Administration Errors (11).

Error Class : The error class identifies the software component issuing the event report.

Error Number : The error number identifies the report that can be looked up in the *Maintenance Messages (SEERs) Reference Manual* (NTP 555-7001-510).

Node Number: The node number is the Meridian Mail node on which the SEER occurred.

Error Description: The error description is a short explanation of the error. For all information related to the SEER, refer to the SEERs NTP.

Analysis and Corrective Actions

This report shows critical SEERs which occurred in the 24-hour period prior to the most recent download. Critical SEERs typically indicate service interruption on the Meridian Mail system. Refer to the SEER NTP for information to help you resolve the critical SEER problem, or refer the SEERs to your support agency.

Application Alerts

Failed Outcalls Alert

This alert report is used to notify the administrator when Remote Notification attempts are not being responded to promptly or when Delivery to Non-User messages are not being received. This alert is triggered when the percentage of failed outcalls to the total number of outcall attempts exceeds a threshold.

Figure 5-2
Failed Outcall Alert

Failed Outcalls Alert
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	Remote Notification Requests		DNU Requests			Total Failed Outcalls
		New Arrivals	Cancelled By Retry	New Arrivals	Cancelled By Retry	Cancelled By Other	
95/08/24	09:00 - 10:00	13	6	0	0	0	6
95/08/24	10:00 - 11:00	10	6	0	0	0	6
95/08/24	11:00 - 12:00	9	6	0	0	0	6
95/08/24	12:00 - 13:00	9	6	0	0	0	6
95/08/24	13:00 - 13:48	5	3	0	0	0	3
95/08/24	14:00 - 15:00	8	5	0	0	0	5
95/08/24	15:00 - 16:00	5	2	0	0	0	2
95/08/24	16:00 - 17:00	7	2	0	0	0	2
95/08/24	17:00 - 18:00	8	5	1	0	0	5
95/08/24	18:00 - 19:00	3	2	0	0	0	2

Percentage of calls that failed 55

Displayed Report Fields

Date/Time Period: The date and time period when the failures occurred.

RN Requests New Arrivals: The number of Remote Notification requests that were presented to the Outcalling feature during the period.

RN Requests Cancelled by Retry Limits: The number of times an RN request has been cancelled due to the fact that calls have been attempted and, as a result, a retry limit is exceeded. (An RN request is cancelled by the Retry Limit if the user is paged but does not log in to Meridian Mail at the time the last retry is completed.)

Note: If, in Meridian Mail, the Answer Retry Limit is set to zero, it cancels all Remote Notification Requests. Therefore, the Percent Failed metric equals 100% so this alert always triggers.

DNU Requests New Arrivals: The number of Delivery to Non-User requests that were presented to the Outcalling feature during the period.

DNU Requests Cancelled by Retry: The number of Delivery to Non-User requests cancelled due to exceeded busy, no answer, or answered not played limits; or the message was stale (too old).

Requests Cancelled by Other: The number of delivery to non-user call attempts where the call could not be completed.

Total Failed Outcalls: The total number of outcalls that failed due to retry or other causes. This number, taken as a percentage of the total outcalls, triggers the alert if the predefined threshold is equalled or exceeded.

The report is sorted by Date and Time period.

Analysis and Corrective Actions

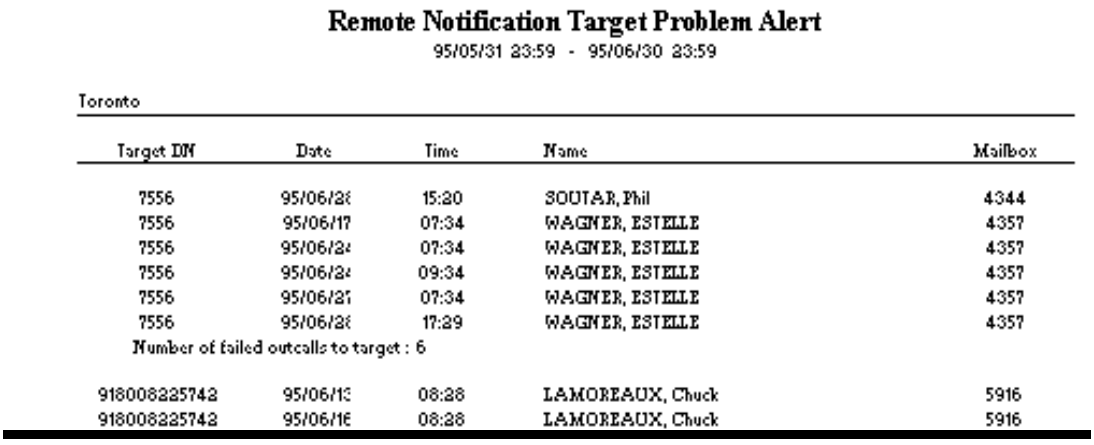
If the Remote Notification or Delivery to Non-Users feature is integral to an organization, this Alert provides some insight into the effectiveness of these features. This Alert may indicate the need to investigate and improve upon the policies used to govern the use of the RN and DNU features.

Too many failed outcalls may indicate an application setup problem. If most of the failures are associated with one channel, it may indicate a channel hardware or setup problem. Escalate this to your support agency. Also, run the Fax Audit Trail Summary report to isolate the cause. See Chapter 11, "Multimedia Applications Reports," for more information on the Fax Audit Trail Summary Report.

Remote Notification Target Problem Alert

This alert report is used to notify the administrator when the number of outcalling failures to a particular Remote Notification (RN) target phone number equals or exceeds a threshold. The threshold is the percentage of failed calls to the total number of outcall attempts to a particular RN phone number. The information in this report may indicate an invalid RN target, a paging service outage, or an RN setup problem.

Figure 5-3
Remote Notification Target Problem Alert



Remote Notification Target Problem Alert

95/05/31 23:59 - 95/06/30 23:59

Toronto

Target DN	Date	Time	Name	Mailbox
7556	95/06/2	15:20	SOUTAR, Phil	4344
7556	95/06/1	07:34	WAGNER, ESTELLE	4357
7556	95/06/2	07:34	WAGNER, ESTELLE	4357
7556	95/06/2	09:34	WAGNER, ESTELLE	4357
7556	95/06/2	07:34	WAGNER, ESTELLE	4357
7556	95/06/2	17:29	WAGNER, ESTELLE	4357
Number of failed outcalls to target : 6				
918008225742	95/06/1	08:28	LAMOREAUX, Chuck	5916
918008225742	95/06/1	08:28	LAMOREAUX, Chuck	5916

Displayed Report Fields

Target DN: The specified DN that was not reached successfully.

Date/Time: The date and time when the failures occurred.

Name: The name of the mailbox owner where the RN request originated.

Mailbox: The mailbox where the RN request originated.

The report can be sorted by Target DN or by Date/Time. The default sort order is Target DN, then Date/Time.

Analysis and Corrective Actions

Too many failed outcalls to an RN target may indicate an invalid target, paging service outage, an RN setup problem, or user unresponsiveness.

If the failures are associated with one mailbox, enter the correct target into the mailbox's RN schedule, or contact the user.

If the failures to an RN target are associated with many mailboxes, then it may indicate an outage at the paging service, a problem between Meridian Mail and the paging service, or user unresponsiveness. To test whether the paging service is at fault, call the service manually to see if it issues a page. If the pager service appears

to be working correctly, then run the Outcalling Audit Trail Detail report to isolate the cause of the failures.

Failed Networking Sessions Alert

This alert report is used to notify the administrator when the number of networking failures due to remote site blockage equals or exceeds a threshold. The threshold is the percentage of networking failures to the total number of networking call attempts to a remote site. The information in this report indicates hardware or setup problems, or insufficient capacity on either the local or remote site.

Figure 5-4
Failed Networking Sessions Alert

Failed Networking Sessions Alert

95/03/30 00:00 - 95/04/06 23:59

Central Offices

Remote Site ID	Date	Time Period	Messages Attempted	Messages Failed	Percent Failed
22	95/04/05	11:00 - 12:00	3	2	67
22	95/04/05	11:00 - 12:00	3	1	33

Total Message Failures: 3
Total Message Attempts: 72
Total Percentage Failure: 4

Displayed Report Fields

Remote Site ID: The identification of the remote site where one or more networking calls failed.

Date/Time Period: The date and time period during which the networking failures occurred.

Messages Attempted: The total number of networking messages attempted to a particular site for the given period since the last download of information.

Messages Failed: The total number of failed messages because the site could not establish a network session to a particular site in the time period specified.

Percent Failed: The percentage of failed calls to the number of total attempted calls to a particular site.

The report can be sorted by Remote Site ID, Date/Time, and Percent Failed. The default sort order is by Remote Site ID, then Date/Time.

Analysis and Corrective Actions

Too many failed networking sessions indicates a networking hardware problem, a setup problem, or a lack of modem capacity on the remote site.

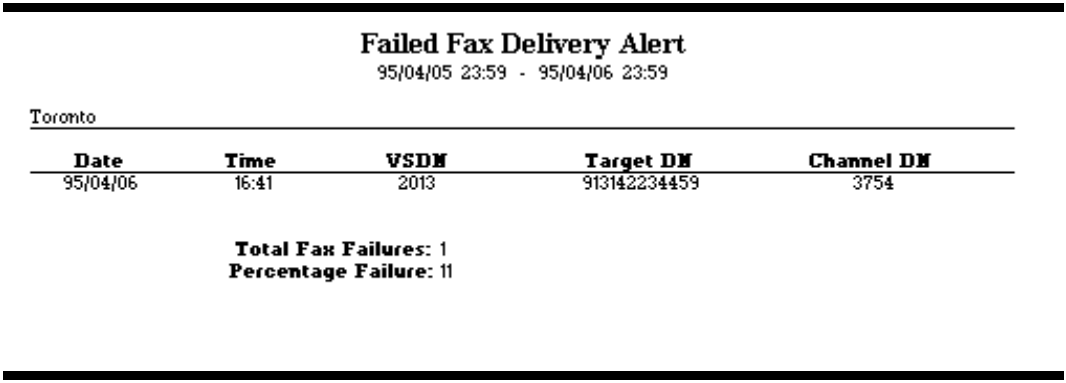
Run the Networking Activity Report to obtain more indicators of the problem. If failures are associated with one site, alert the administrator of the remote site that there is likely a problem with that site's networking setup or hardware.

If the failures do not seem to be specific to any one site, run the SEER Query Report for Class 36 SEERs indicating network failure events. Check your networking modems and cabling; reset them if necessary.

Failed Fax Delivery Alert

This alert report is used to notify the administrator when the number of fax delivery failures equals or exceeds a threshold. The threshold is the percentage of fax delivery failures to the total number of fax delivery attempts. A fax delivery fails if the complete fax item is not delivered to the target DN. The report contains the failed fax delivery attempts only. The information in this report may also indicate an application setup problem.

Figure 5-5
Failed Fax Delivery Alert



Failed Fax Delivery Alert

95/04/05 23:59 - 95/04/06 23:59

Toronto

Date	Time	VSDN	Target DN	Channel DN
95/04/06	16:41	2013	913142234459	3754

Total Fax Failures: 1
Percentage Failure: 11

Displayed Report Fields

Date/Time: The date and time the fax delivery problems occurred.

VSDN: The VSDN of the Fax on Demand application that received the fax call back request.

Target DN: The DN entered by the caller to which the fax was not delivered successfully.

Channel DN: The DN associated with the Meridian Mail channel attempting the fax delivery.

The report can be sorted on the Date/Time, VSDN DN, and the Target DN fields. The default sort order is by Date/Time.

Analysis and Corrective Actions

Failed fax deliveries may be due to user error such as incorrect keying during the entry of the fax number to send the fax. A very quick test is to call the Target DN to ensure that a fax modem is used to answer the call (fax modems issue a "carrier tone" which is audible to the human ear). Other error possibilities are a busy signal, or the fax carrier is not available because the fax machine is out of paper, powered off, or out of order.

Too many failed fax delivery sessions may indicate an application setup problem. If most of the failures are associated with one channel, it may indicate a channel hardware or setup problem. Escalate this to your support agency.

Also, run the Fax Audit Trail Summary report to isolate the cause. See Chapter 11, "Multimedia Applications Reports," for more information on the Fax Audit Trail Summary Report.

Security Alerts

Security alerts notify the administrator of suspicious activity that occurred in the last 24 hours. These events may indicate hacker activity.

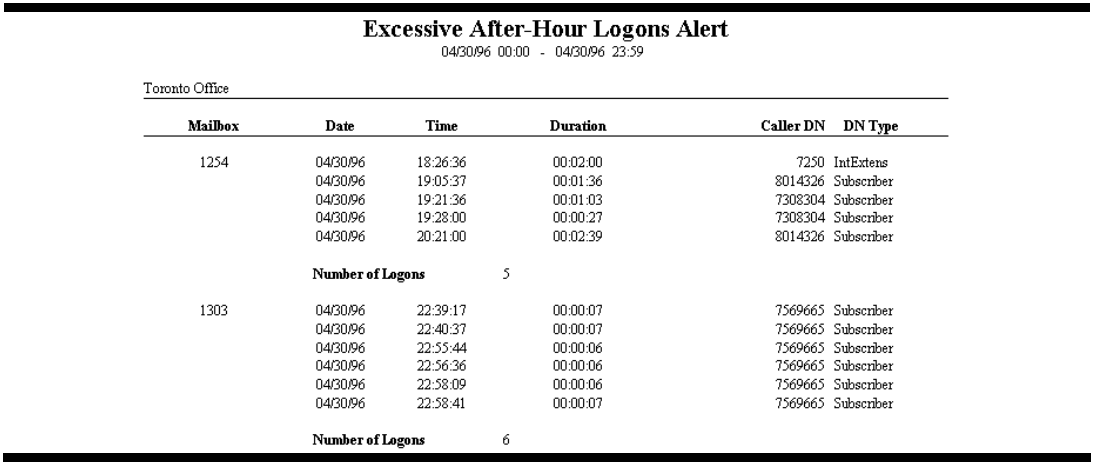
Excessive After-Hour Logons Alert

This alert report is used to notify you when the number of after-hours logons to a mailbox meets or exceeds a threshold. This report detects high logon activity that might indicate that a hacker has compromised a mailbox on the system.

You can modify the after-hours period by selecting the After Hours command from the Maintenance pull-down menu on the MMR Menu Bar, or you can just use the

system defaults (6:00 p.m. to 6:00 a.m. weekdays, and all day Saturday and Sunday) provided with MMR. The report shows each mailbox where the number of after-hours logons exceeded the threshold and each logon occurrence for that mailbox.

Figure 5-6
Excessive After-Hour Logons Alert



Excessive After-Hour Logons Alert

04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Mailbox	Date	Time	Duration	Caller DN	DN Type
1254	04/30/96	18:26:36	00:02:00	7250	IntExtens
	04/30/96	19:05:37	00:01:36	8014326	Subscriber
	04/30/96	19:21:36	00:01:03	7308304	Subscriber
	04/30/96	19:28:00	00:00:27	7308304	Subscriber
	04/30/96	20:21:00	00:02:39	8014326	Subscriber
	Number of Logons	5			
1303	04/30/96	22:39:17	00:00:07	7569665	Subscriber
	04/30/96	22:40:37	00:00:07	7569665	Subscriber
	04/30/96	22:55:44	00:00:06	7569665	Subscriber
	04/30/96	22:56:36	00:00:06	7569665	Subscriber
	04/30/96	22:58:09	00:00:06	7569665	Subscriber
	04/30/96	22:58:41	00:00:07	7569665	Subscriber
	Number of Logons	6			

Displayed Report Fields

Mailbox: The mailbox associated with the after-hours logons.

Date/Time: The date and time that the logons occurred. The report records after-hours logons only.

Duration: The length in hh:mm:ss of the call.

Caller DN: The telephone number from where the logon originated. This field can contain four digits (mailbox), five or six digits (trunk group and member number), the last seven digits of a telephone number, or asterisks (*) if the data coming from the switch is null.

DN Type: For MM11 only. The Directory Number (DN) type as described in Table 5-1.

Table 5-1
DN Types and Descriptions

DN Type	Description
Unknown	unknown
Intnl	international
National	national
Special	special
Subscriber	subscriber
LocnCode	location code call
CoordDial	coordinated dialing plan
reserved	reserved for expansion
IntExtens	internal extension
RTMember	route/trunk member
RTAccess	route only (network automatic call distribution)
Attendant	attendant/member
AcdPosID	automatic call distribution position id
AcdDNIS	automatic call distribution dialed number identification service
IANI/Acd	in-band automatic number identification/automatic call distribution
IANI	in-band automatic number identification
AcdDN	automatic call distribution directory number

Table 5-1 (continued)
DN Types and Descriptions

DN Type	Description
AcdDNPos	automatic call distribution directory number position id
Transfer	transfer
Conference	conference
CallWaiting	call waiting
GroupCall	group call
ControlledDN	controlled directory number
CDN/DNIS	controlled directory number/ dialed number identification service

The report can be sorted by Mailbox or Date/Time. The default sort order is by Mailbox, then Date/Time.

Analysis and Corrective Actions

Check the security settings for the mailbox to see if Mailbox Extension Dialing or Revert DN features allow toll calls. If toll calls can be made and there are frequent logons of short duration, this indicates that hackers are using the mailbox to gain access to its thru-dialer to make unauthorized toll calls. Change the password immediately. Call the mailbox owner to determine if he or she has been generating the after-hours logons. If not, force a password change for the mailbox to prevent further mailbox abuse.

To review logons during business hours, run the Session Trace Utility on Meridian Mail for the mailboxes and time interval of interest. Also, run the Mailbox Session Analysis Report (see Chapter 8, “Voice Mail Reports,” for information on this report).

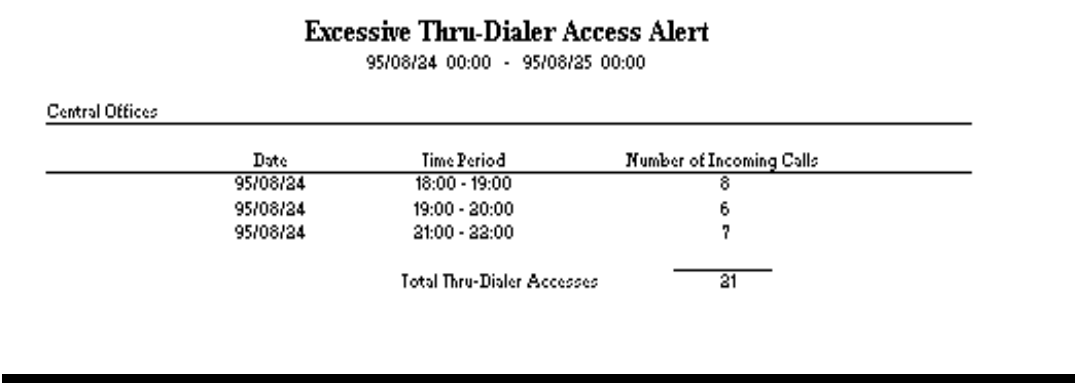
Note: The download should be scheduled after 12:00 midnight in order to allow OM data for the previous day to be collected. For example, if you are running a multi-site configuration, make sure that all downloads from remote sites are started after 12:00 midnight *their* time.

Excessive Thru-Dialer Access Alert

This alert report is used to notify you when the number of after-hours thru-dialer accesses meets or exceeds a threshold. This report is useful if you suspect that a hacker has compromised your Meridian Mail system and is using thru-dialing from a mailbox or voice service thru-dialer.

You can modify the after-hours period by selecting the After Hours command from the Maintenance pull-down menu on the MMR Menu Bar, or you can just use the system defaults (6:00 p.m. to 6:00 a.m. weekdays, and all day Saturday and Sunday) provided with MMR. The report shows after-hours periods where thru-dial accesses equals or exceeds the threshold.

Figure 5-7
Excessive Thru-Dialer Access Alert



Excessive Thru-Dialer Access Alert

95/08/24 00:00 - 95/08/25 00:00

Central Offices

Date	Time Period	Number of Incoming Calls
95/08/24	18:00 - 19:00	8
95/08/24	19:00 - 20:00	6
95/08/24	21:00 - 22:00	7
	Total Thru-Dialer Accesses	21

Displayed Report Fields

Date/Time Period: The date and time period during which the thru-dialing occurred. The report records after-hours thru-dialing only.

Number of Incoming Calls: The number of incoming calls accessing a thru-dialing session.

This report is sorted by Date/Time.

Analysis and Corrective Actions

Determine whether the potential hacker activity is through a mailbox or through a voice service thru-dialer. If a hacker is using a mailbox thru-dialer, you should see an unusual number of logons to one or more mailboxes. Check the Excessive After-

Hours Logon Alert. If the mailbox activity seems to be normal, the activity is probably through a voice service thru-dialer.

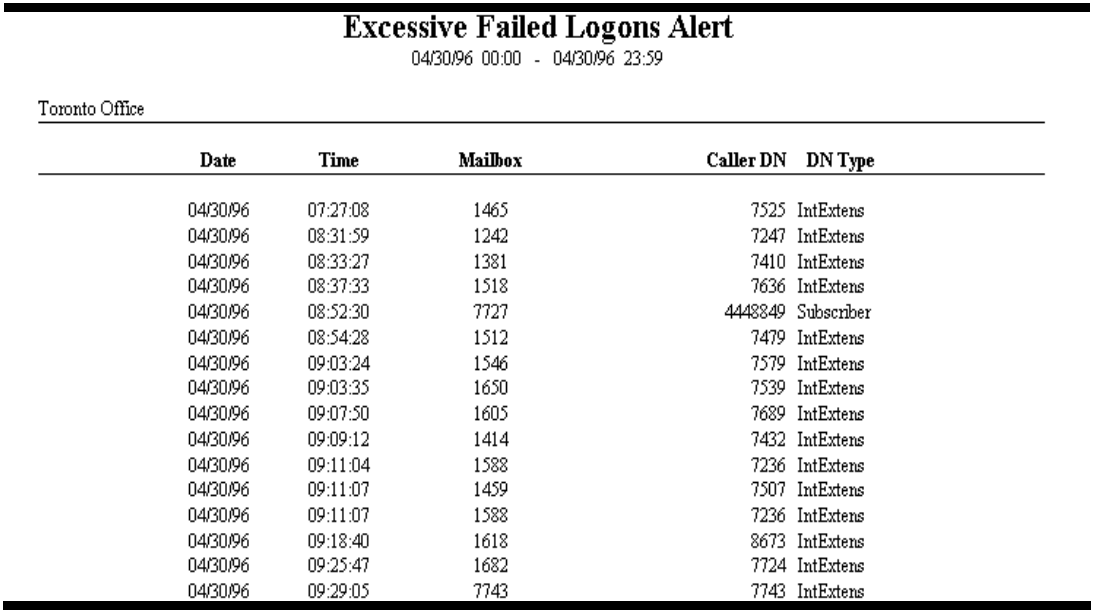
Check security restrictions on all thru-dialers on your system. Ensure that access to the public network is blocked.

Excessive Failed Logons Alert

This alert report is used to notify you when the number of failed logon attempts due to an invalid password meets or exceeds a threshold. An unusual number of unsuccessful logons may be due to hacker activity. A hacker will continue to try passwords to attempt to penetrate one or more mailboxes on the system.

The threshold is the number of failed logons set by the administrator. The report shows only the failed logons.

Figure 5-8
Excessive Failed Logons Alert



Excessive Failed Logons Alert

04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Date	Time	Mailbox	Caller DN	DN Type
04/30/96	07:27:08	1465	7525	IntExtens
04/30/96	08:31:59	1242	7247	IntExtens
04/30/96	08:33:27	1381	7410	IntExtens
04/30/96	08:37:33	1518	7636	IntExtens
04/30/96	08:52:30	7727	4448849	Subscriber
04/30/96	08:54:28	1512	7479	IntExtens
04/30/96	09:03:24	1546	7579	IntExtens
04/30/96	09:03:35	1650	7539	IntExtens
04/30/96	09:07:50	1605	7689	IntExtens
04/30/96	09:09:12	1414	7432	IntExtens
04/30/96	09:11:04	1588	7236	IntExtens
04/30/96	09:11:07	1459	7507	IntExtens
04/30/96	09:11:07	1588	7236	IntExtens
04/30/96	09:18:40	1618	8673	IntExtens
04/30/96	09:25:47	1682	7724	IntExtens
04/30/96	09:29:05	7743	7743	IntExtens

Displayed Report Fields

Date/Time: The date and time that the failed logon occurred.

Mailbox: The mailbox with the failed logon attempt.

Caller DN: The number that originated the attempt. This field can contain four digits (mailbox), five or six digits (trunk group and member number), the last seven digits of a telephone number, or asterisks (*) if the data coming from the switch is null.

DN Type: For MM11 only. The Directory Number (DN) type as described in Table 5-1.

This report is sorted by either Date/Time or Mailbox. The default is by Date/Time, then Mailbox.

Analysis and Corrective Actions

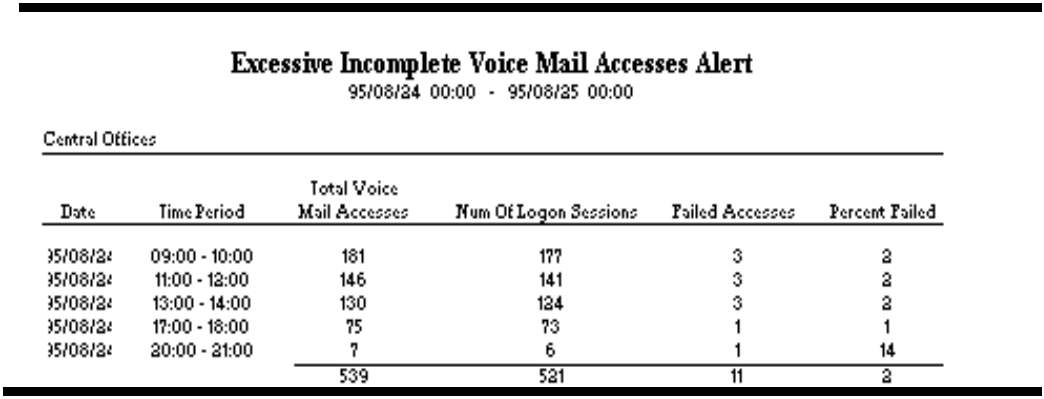
If the logon failures are spread among a large number of mailboxes, this may be evidence of hacker activity.

Remind all mailbox owners that passwords should have some degree of difficulty so that the system remains secure. Also, if this alert indicates that there is systematic probing by a hacker, he or she may have been successful. Pay special attention to the Excessive After-Hour Logons Alert for unusual activity.

Excessive Incomplete Voice Mail Accesses Alert

This alert report is used to notify you when there is a greater than usual number of attempts to log on to an invalid mailbox number (for example, a nonexistent mailbox). This activity could be an indication that a hacker is trying to gain access to your system without prior knowledge of the mailbox numbering plan. The hacker is likely to access invalid mailboxes causing this alert to be triggered. The report is produced when the number of attempts to log on to an invalid mailbox meets or exceeds the user-defined threshold.

Figure 5-9
Excessive Incomplete Voice Mail Accesses Alert



Excessive Incomplete Voice Mail Accesses Alert

95/08/24 00:00 - 95/08/25 00:00

Central Offices

Date	Time Period	Total Voice Mail Accesses	Num Of Logon Sessions	Failed Accesses	Percent Failed
95/08/24	09:00 - 10:00	181	177	3	2
95/08/24	11:00 - 12:00	146	141	3	2
95/08/24	13:00 - 14:00	130	124	3	2
95/08/24	17:00 - 18:00	75	73	1	1
95/08/24	20:00 - 21:00	7	6	1	14
		539	521	11	2

Displayed Report Fields

Date/Time Period: The date and time period during which the failed logon attempts were made.

Total Voice Mail Accesses: The total number of attempted logons to Voice Mail, successful or unsuccessful.

Num of Logon Sessions: The total number of successful logons to voice mail.

Failed Accesses: The total number of failed logons to Voice Mail due to an invalid mailbox.

Percent Failed: The percentage of failed accesses over the total number of Voice Mail accesses.

The report is sorted by Date/Time.

Analysis and Corrective Actions

This alert indicates that there is an unusually high number of attempts to log on to invalid voice mailboxes. This activity could be the result of a hacker using a computer to systematically gain access to a mailbox on your system, but with no prior knowledge of the mailbox numbering plan.

Remind all mailbox owners that passwords should have some degree of difficulty so that the system remains secure.

Also, if this alert indicates that there is systematic probing by a hacker, s/he may have been successful. Pay special attention to the Excessive After-Hour Logons Alert for unusual activity.

Chapter6:SystemStatusReports

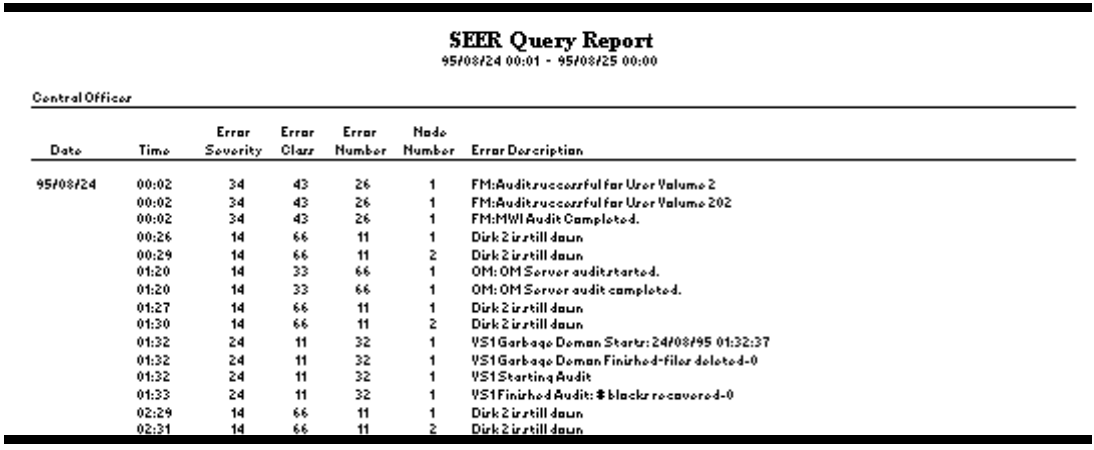
Overview

This chapter contains report examples, field definitions, and analyses of System Status reports that are available to you. Corrective actions are included where applicable.

SEER Query Report

This report is useful for finding SEER information when required for trouble shooting.

Figure 6-1
SEER Query Report



SEER Query Report
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time	Error Severity	Error Class	Error Number	Node Number	Error Description
95/08/24	00:02	34	43	26	1	FM:Audit successful for User Volume 2
	00:02	34	43	26	1	FM:Audit successful for User Volume 202
	00:02	34	43	26	1	FM:MWI Audit Completed.
	00:26	14	66	11	1	Disk 2 is still down
	00:29	14	66	11	2	Disk 2 is still down
	01:20	14	33	66	1	OM: OM Server audit started.
	01:20	14	33	66	1	OM: OM Server audit completed.
	01:27	14	66	11	1	Disk 2 is still down
	01:30	14	66	11	2	Disk 2 is still down
	01:32	24	11	32	1	VS1 Garbage Doman Start: 24/08/95 01:32:37
	01:32	24	11	32	1	VS1 Garbage Doman Finished-files deleted-0
	01:32	24	11	32	1	VS1 Starting Audit
	01:33	24	11	32	1	VS1 Finished Audit: # blocks recovered-0
	02:29	14	66	11	1	Disk 2 is still down
	02:31	14	66	11	2	Disk 2 is still down

Report Filters

This report can be filtered by Error Class, Error Number, Error Severity, and Node.

Displayed Report Fields

Date/Time: The date and time the SEER was created. The Time field shows only hours and minutes; however, a report sorted by time includes information to the second that a SEER occurred.

Error Severity: The severity of the SEER, the clear alarm code, or both.

1	critical	11	admin critical	-10	clear critical alarm
2	major	12	admin major	-20	clear major alarm
3	minor	13	admin minor	-30	clear minor alarm
4	error information	14	admin information		
24	system information	34	debug information		

Error Class: The class of the SEER.

Error Number: The SEER error number.

Node Number: The Meridian Mail node where the SEER occurred.

Error Description: The error string of information from the SEER. This information is a short description of the error.

The report can be sorted by Date/Time, Error Class, Error Severity, or Node Number. The default is by Date/Time.

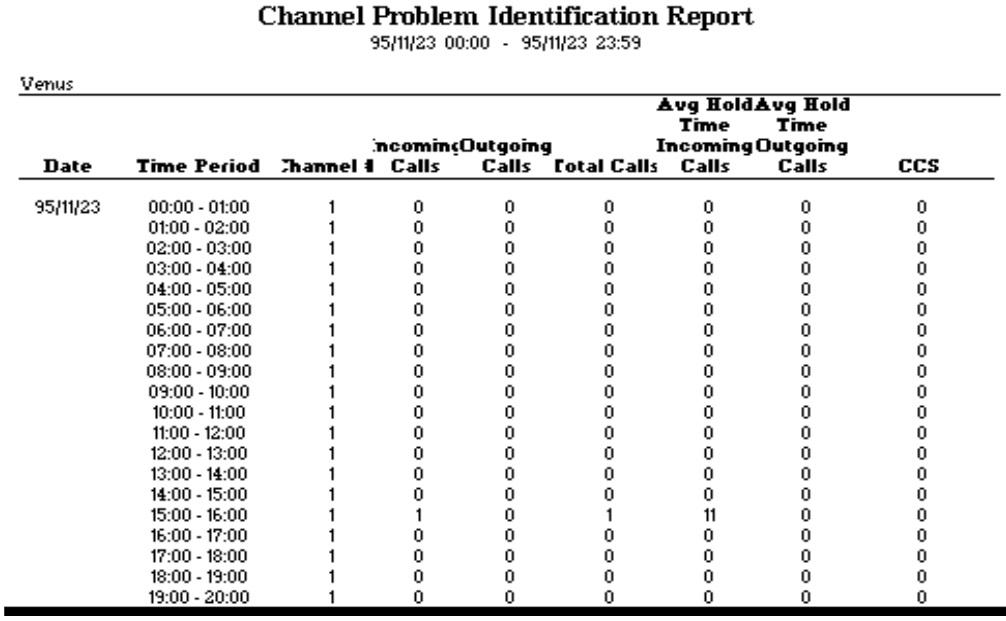
Analysis and Corrective Actions

The report lists the SEERs that were produced by Meridian Mail. The class and number are used to locate appropriate information and maintenance actions in the *Maintenance Messages (SEERs) Reference Manual* (NTP 555-7001-510).

Channel Problem Identification Report

This report provides a channel usage summary and histogram. The report can be used to identify channels that are experiencing either low traffic or unusually short hold times. This information can be helpful in determining if there are hardware or configuration problems affecting the channels.

Figure 6-2
Channel Problem Identification Report



Channel Problem Identification Report

95/11/23 00:00 - 95/11/23 23:59

Venus

Date	Time Period	Channel #	Incoming Calls	Outgoing Calls	Total Calls	Avg Hold Time Incoming Calls	Avg Hold Time Outgoing Calls	CCS
95/11/23	00:00 - 01:00	1	0	0	0	0	0	0
	01:00 - 02:00	1	0	0	0	0	0	0
	02:00 - 03:00	1	0	0	0	0	0	0
	03:00 - 04:00	1	0	0	0	0	0	0
	04:00 - 05:00	1	0	0	0	0	0	0
	05:00 - 06:00	1	0	0	0	0	0	0
	06:00 - 07:00	1	0	0	0	0	0	0
	07:00 - 08:00	1	0	0	0	0	0	0
	08:00 - 09:00	1	0	0	0	0	0	0
	09:00 - 10:00	1	0	0	0	0	0	0
	10:00 - 11:00	1	0	0	0	0	0	0
	11:00 - 12:00	1	0	0	0	0	0	0
	12:00 - 13:00	1	0	0	0	0	0	0
	13:00 - 14:00	1	0	0	0	0	0	0
	14:00 - 15:00	1	0	0	0	0	0	0
	15:00 - 16:00	1	1	0	1	11	0	0
	16:00 - 17:00	1	0	0	0	0	0	0
	17:00 - 18:00	1	0	0	0	0	0	0
	18:00 - 19:00	1	0	0	0	0	0	0
	19:00 - 20:00	1	0	0	0	0	0	0

Report Filters

This report can be filtered by Channel.

Displayed Report Fields

Date/Time Period: The date and time period of the report.

Channel #: The number of the channel.

Incoming Calls: The number of incoming calls on each channel.

Outgoing Calls: The number of outgoing calls on each channel.

Total Calls: The total number of incoming and outgoing calls on each channel. This value is also provided in graph format.

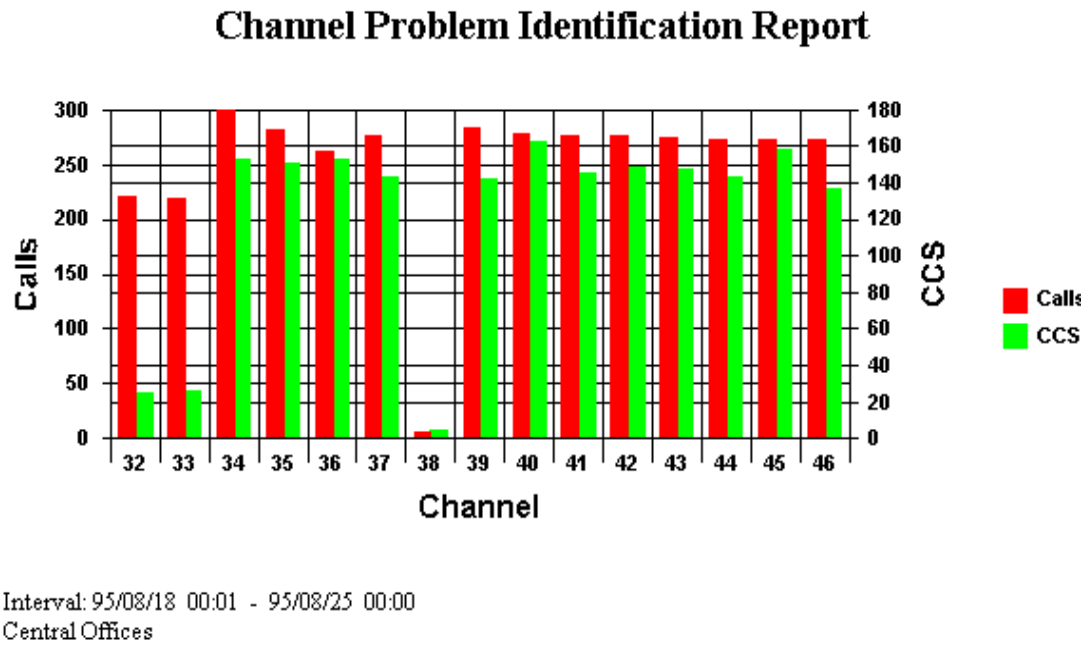
Avg Hold Time Incoming Calls: The average hold time (seconds) on incoming calls on each channel.

Avg Hold Time Outgoing Calls: The average hold time (seconds) on outgoing calls on the channel.

CCS: The amount of traffic in centa-call seconds (CCS) that the channel handled during the period. (The numbers are rounded to the nearest integer with the total

being the total of the rounded integers.) This field can also be displayed in Erlangs. (The number of Erlangs are rounded to two decimals with the total being the total of the rounded numbers.) To set the units for the field, select CCS or Erlangs from the Maintenance pull-down menu of the MMR Reports menu bar.

Figure 6-3
Channel Problem Identification Report graph



The report can be sorted by Date/Time Period, Channel #, Total Calls, or CCS/ Erlang. The default sort is by Date/Time Period.

Analysis and Corrective Actions

The report shows how busy each channel on your system is. With Automatic Call Distribution (ACD), the traffic on the channels should be relatively balanced over an extended period of time.

Channels that are dedicated to traffic for a particular incoming or outgoing service may show less usage than the other channels.

If a channel shows no traffic (measured in either Erlangs or CCS), check to make sure that the channel is operational. A channel showing low usage could also have intermittent problems that cause it to be less efficient.

If all channels are active and users of your system are experiencing delays in accessing the Meridian Mail system, check to see if the dedicated channels are handling many fewer calls than the nondedicated channels. If so, you may want to remove the dedication of the channels so that the calls can be spread more evenly over the channels to maximize the traffic-carrying capacity of your system. Also, note that channels with a high number of calls but a low CCS may indicate a problem since this typically implies short hold times which could mean that calls are abandoned very quickly (for example, if a call is inadvertently being routed to the wrong voice service).

To trace a problem identified with a channel to DSP hardware or to a Terminal Number (TN) on the switch, find the channel in the Channel Allocation Table (CAT). Look up the CDP location of the DSP (non-MSM systems only) and TN (Meridian 1 only), or the Message Desk and TN under the Rout.Addr field (GP and MSM only).

Disk Usage Monitor Report

This report determines whether the system has sufficient disk volume storage to handle the current messaging and multimedia applications. It provides a long-term message monitor and VS1 storage monitor. The report also provides graphic representation of voice usage trends for both VS1 and non-VS1 volumes.

Figure 6-4
Disk Usage Monitor Report

Disk Usage Monitor Report

95/08/25 00:01 - 95/08/26 00:00

Central Officer

Date	Time Period	Volume ID	Voice Capacity (hh:mm)	Voice Used (hh:mm)	Percentage of Voice Used	Text Capacity KB	Text Used KB	Percentage of Text Used
95/08/25	01:00 - 02:00	VS1	03:39	01:06	30	35904	17574	49
95/08/25	01:00 - 02:00	VS2	26:57	21:48	81	8160	2404	29
95/08/25	01:00 - 02:00	VS202	64:29	32:57	51	21488	3272	15
95/08/25	02:00 - 03:00	VS1	03:39	01:06	30	35904	17577	49
95/08/25	02:00 - 03:00	VS2	26:57	21:48	81	8160	2404	29
95/08/25	02:00 - 03:00	VS202	64:29	32:57	51	21488	3271	15
95/08/25	03:00 - 04:00	VS1	03:39	01:06	30	35904	17548	49
95/08/25	03:00 - 04:00	VS2	26:57	20:55	78	8160	2287	28
95/08/25	03:00 - 04:00	VS202	64:29	32:34	51	21488	3191	15
95/08/25	04:00 - 05:00	VS1	03:39	01:06	30	35904	17516	49
95/08/25	04:00 - 05:00	VS2	26:57	20:55	78	8160	2288	28
95/08/25	04:00 - 05:00	VS202	64:29	32:34	51	21488	3192	15
95/08/25	05:00 - 06:00	VS1	03:39	01:06	30	35904	17524	49
95/08/25	05:00 - 06:00	VS2	26:57	20:56	78	8160	2289	28
95/08/25	05:00 - 06:00	VS202	64:29	32:34	51	21488	3192	15

Displayed Report Fields

Date/Time Period: The date and reporting interval.

Volume ID: The ID of the storage volume. Volumes are sections on a Meridian Mail disk. For details on storage volumes, see the *System Administration Guide* (NTP 555-7001-301).

Voice Capacity: The amount of voice storage space available reported in hours and minutes (hh:mm).

Voice Used: The amount of voice storage currently used on the volume in hours and minutes (hh:mm).

Percentage of Voice Used: The percentage of voice capacity on the volume that is currently in use.

Text Capacity: The amount of text space available on the volume in kilobytes (kb).

Text Used: The amount of text space currently used on the volume in kilobytes (kb).

Percentage of Text Used: The percentage of text capacity on the volume that is currently in use.

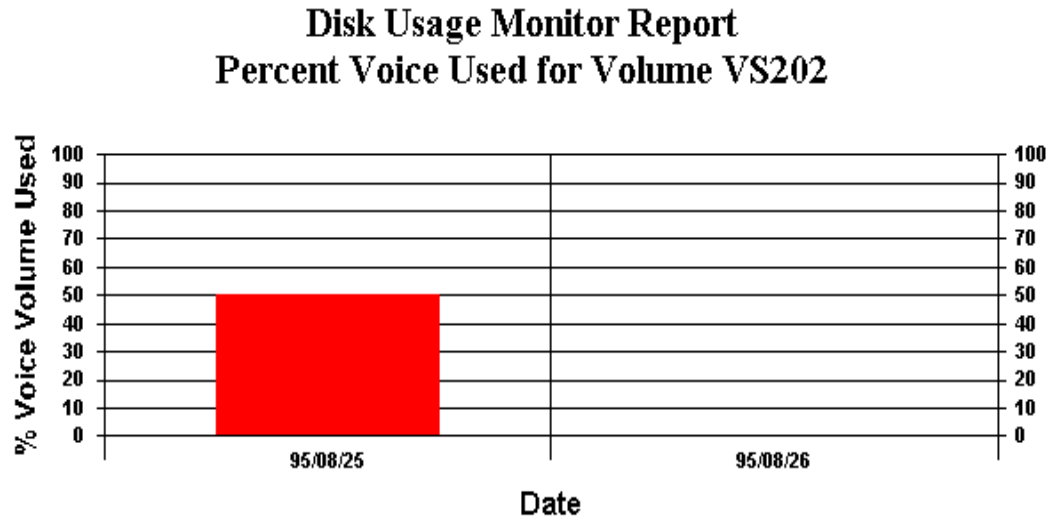
The report can be sorted by Date/Time Period, Percentage of Voice Used, and Percentage of Text Used. The default sort is by Date/Time Period.

Analysis and Corrective Actions

Any volumes that are running with more than 85% capacity of voice or text storage require corrective action to prevent future problems. The first thing to do is to try to balance the loading of the volumes. Move users' mailboxes from full volumes to volumes with spare capacity (use the Move User tool in Admin Tools). Ranking of volumes by percent full can be determined by creating a custom report using Percentage of Voice Used as sort key #1. Capacity usage will fluctuate depending on usage patterns. Typically, storage will peak before the morning and after-lunch logon peaks.

If all user volumes are near or above 85% of capacity, you should run the Top Users of Storage Report (see Chapter 8, "Voice Mail Reports") to identify mailboxes that are currently storing an excessive number of messages. For these users, you may want to reduce message retention time or message length parameters, or both. Moving these users to low-usage volumes will also provide relief.

Figure 6-5
Disk Usage Monitor Graph



To identify unused mailboxes, run the Inactive User Report. As system administrator, you should make sure that all unused mailboxes are deleted to minimize storage used and eliminate potential targets for hackers. Any distribution lists that reference these unused mailboxes should be updated. See “General Administration” in the Meridian Mail *System Administration Reference Manual* (NTPs 555-7001-301, 555-7001-307, or 557-7001-302) for more information on volume management.

When text usage of VS1 exceeds 85% of capacity, do the following:

- Review the retention of OM data on the OM Options screen. You can reduce the OM settings down to the minimum specified in Chapter 3, “Installing MMR.”

- If the text capacity continues to grow, your nightly audit may not be running to completion. Run the SEER Query report with class=11, and ensure that the audits are completing successfully.

If the voice usage of VS1 exceeds 85% of capacity, do the following:

- Check if there are a large number of voice service or fax on demand applications, or both, implemented on the system. If there are, contact your distributor to have them moved from the VS1 volume to a user volume using the Move Voice Services Cabinet utility.

- If there are few multimedia applications or if the Voice Services Cabinet has already been moved, check the SEER Query Report to see if the nightly audit is completing successfully.

If capacity utilization continues running at 85% or higher, you may need to expand the system's storage capacity.

Note: If the system generates a SEER 1103, print this report immediately. SEER 1103 indicates that a volume on your system has reached physical or virtual capacity. Make sure that the nightly audit feature is functioning. Contact your distributor to help you remove files from the volume that is affected. If the operation involves VS1, remove text or voice directory entries. The effect of corrective actions may not be seen until after the nightly audit is run. Again, consider the redistribution of users on multi-node systems, or turning on automatic message deletion. A storage upgrade may be necessary if these actions do not improve the system substantially.

Chapter 7: Traffic Reports

Overview

This chapter contains report examples, field definitions, and analyses of Traffic reports that are available to you. Traffic reports help you to analyze the traffic generated by the entire system, individual services, or service families on the system. Corrective actions are included where applicable.

System Traffic Summary Report

This report helps you to understand the traffic patterns through your Meridian Mail system. The report provides information that enables you to identify the busy periods and to estimate the current grade of service that the system is providing.

This information is useful for determining whether your system has enough ports to service your users.With this report, you can also determine the system traffic generated by specific services and by service families such as Fax on Demand, and Voice Forms.

The report is also available in graph format. It is produced at the same time as the summary output.

Figure 7-1
System Traffic Summary Report

System Traffic Summary Report
95/11/29 00:00 - 95/11/29 23:59

Central Offices

Date	Time Period	Service Name	Total Accesses	Average Hold Time (mm:ss)	CCS	% Of Period Total
95/11/29	00:00 - 01:00	Thru-Dial	2	00:10	0	0.00
95/11/29	00:00 - 01:00	Voice Menus	1	00:03	0	0.00
95/11/29	00:00 - 01:00	Voice Messaging	9	00:26	2	50.00
95/11/29	00:00 - 01:00	Call Answering	4	00:52	2	50.00
95/11/29	00:00 - 01:00	AMIS Networking	0	00:00	0	0.00
95/11/29	00:00 - 01:00	ACCESS summary	0	00:00	0	0.00
95/11/29	00:00 - 01:00	Express Messaging	0	00:00	0	0.00
95/11/29	00:00 - 01:00	Voice Announcements	0	00:00	0	0.00

Report Filters

This report can be filtered by Accesses, Services, and Service Groups.

A service group represents a collection of related services. Table 7-1 lists both services and service groups. The services that do not belong to a particular group appear at the beginning of the table.

To filter by an individual service, select Services under Item, select IS EQUAL TO under Test, and type the service's name (as it appears in the table) under Value. To filter by a service group, select Services under Item, select IS EQUAL TO under Test, and type the service group's name followed by "group" under Value. You must type the word "group" after the name (for example, Messaging Group) for the filter to work correctly.

Table 7-1
System Traffic Summary Report Filters
Note: ***** for MM11 only

Service Groups	Services
	ACCESS Summary
	Delivery to Non-user
	Detail AMIS Traffic
	Detail Fax Delivery Traffic
	Detail FD Traffic
	Detail Hospitality Traffic
	Detail Outcalling Traffic
	Detail SMDI link handler traffic
	Detail T1 link handler traffic
	Local MTA Traffic
	Network MTA Traffic
	OCA (outcalling agent)
	Post Checkout
	Thru-Dial
	Traffic Date header record
	UNETBIL (AMIS)
	UNETBIL (Networking)
	User usage header
	UVMBIL
	VM detail traffic
	VM Pegs - data record
	VM Pegs - time record

Table 7-1 (continued)
System Traffic Summary Report Filters
Note: ******* for MM11 only

Service Groups	Services
	Voice Administration
	Voice port traffic
	Voice Path Diagnostics*****
	Voice Prompt Admin
	Volume server traffic
Messaging	ACCESS Traffic
	AMIS Networking
	Call Answering
	Enterprise Networking*****
	Express Messaging
	Networking
	Remote Notification
	Voice Messaging
Fax On Demand	Fax Call Back
	Fax Information Service
	Fax Item Maintenance
	Fax Same Call
Voice Forms	Transcription Service
	Voice Forms
Multimedia	Fax Call Back
	Fax Information Service

Table 7-1 (continued)
System Traffic Summary Report Filters
Note: * for MM11 only

Service Groups	Services
	Fax Item Maintenance
	Fax Same Call
	Remote Activation
	Time of Day Control
	Transcription Service
	Voice Announcements
	Voice Forms
	Voice Menus

Displayed Report Fields

Date/Time Period: The date and reporting period.

Service Name: The name of the service, such as call answering, that was accessed. Thru-Dial accesses include accesses to mailbox thru-dialers that result from Call Answering and Voice Messaging sessions as well as accesses to the Thru-dialer voice service. An access will be recorded for Time of Day Controller and the service to which it leads. A Voice Administration incidence is recorded each time a call is placed from Meridian Mail to the administration phone for the purpose of recording personal verifications and system greetings.

Total Accesses: The total number of accesses made to the corresponding service.

Note: A single call can result in "accesses" to different services. For example, a call to Call Answering where the caller leaves a message and thru-dials to another DN is accounted for as an access to Call Answering and an access to thru-dialing.

Average Hold Time: The average length, in seconds, of an access to the service during the specified period.

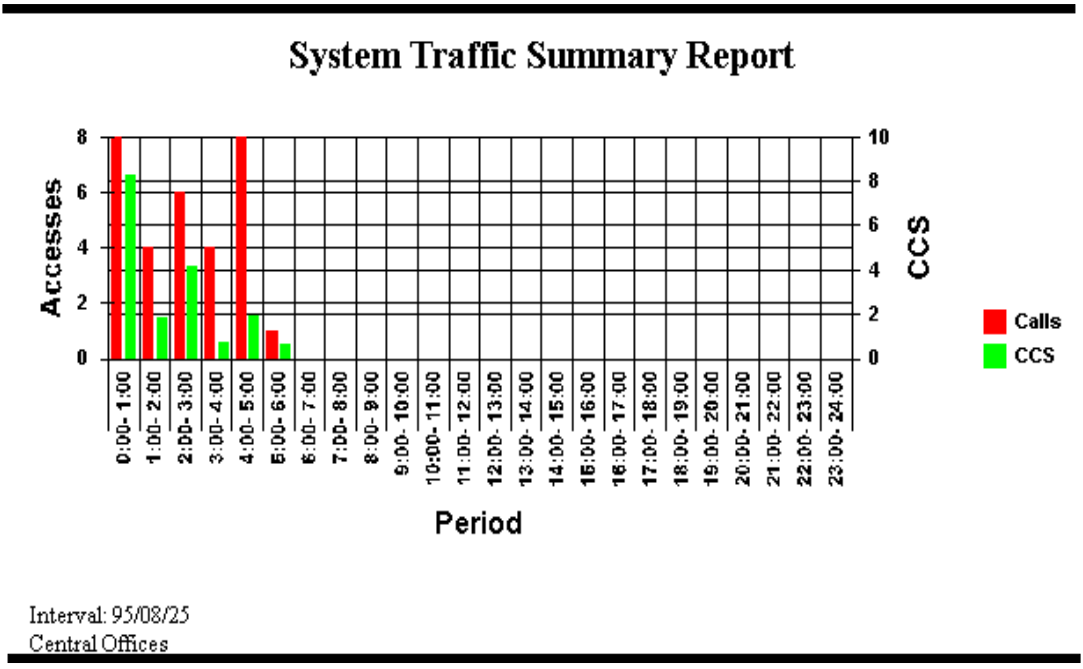
CCS: The traffic in centa call-seconds (CCS) to the service (this is the default). (The numbers are rounded to the nearest integer with the total being the total of the rounded integers.) This field can also be displayed in Erlangs. (The number of Erlangs are rounded to two decimals with the total being the total of the rounded

numbers.) Select Erlangs from the Maintenance pull-down menu of the MMR Reports menu bar to change the field display.

% of Period Total: The percentage of total traffic that this service generates.

The report can be sorted by Date/Time Period, Service Name, Total Accesses, and CCS. The default report is sorted by Date/Time Period.

Figure 7-2
System Traffic Summary Graph



Analysis and Corrective Actions

By using this report, you can gain an overall sense of which services generate the most traffic and which generate little or no traffic. Consider the following points:

- If a feature is not being used, it may not be working properly, or users may not be aware that the service exists. Determine if the feature is working correctly. If it is working correctly, determine why the usage is so low. Do your users know of its existence? Have they been properly educated on the use of the feature? At your site, it may be normal for the service to be used less during some periods rather than others. These are all questions which have to be answered.

- If the feature is generating extremely high usage, you may encounter system performance problems, such as no free channels. Run a report on the individual service to determine where the usage originates and whether it is a normal or abnormal occurrence. This can be done by creating a custom report with a filter for the selected service.

- Check the average length of Voice Menu and Announcement Accesses. If the average length is long, review your menus and announcements to see if they can be shortened. For menus, place the popular items first so that the users do not need to stay on the line as long.

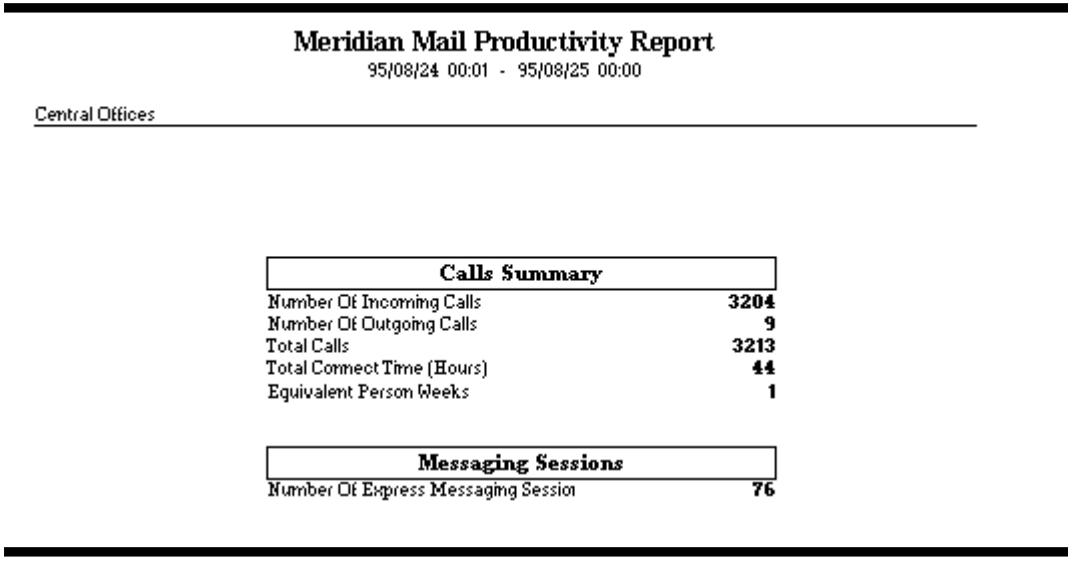
- To identify the busy hour traffic for your system(s), run the report with the interval set for one day, midnight to midnight. A bar graph will be generated showing the traffic (CCS/Erlangs) and accesses for each hour of the day. From this graph, it is possible to visually pick the peak hour traffic. If there are no dedicated ports, then the port capacity table in the chapter "Determining System Size" in the *Site and Installation Planning Guide* (NTP 555-70x1-200), can be used to determine if the busy hour traffic can be served by the number of ports on the system.

Note: If the reporting interval is one day, the graph displays the data for the last 24-hour period only.

Meridian Mail Productivity Report

This report is useful in providing information on productivity gains realized by using the Meridian Mail system. The report provides Call Summary information, Messaging Sessions, Messages Created, Accesses to Multimedia Applications, and other Network activities during the interval requested.

Figure 7-3
Meridian Mail Productivity Report



Meridian Mail Productivity Report
95/08/24 00:01 - 95/08/25 00:00

Central Offices

Calls Summary	
Number Of Incoming Calls	3204
Number Of Outgoing Calls	9
Total Calls	3213
Total Connect Time (Hours)	44
Equivalent Person Weeks	1

Messaging Sessions	
Number Of Express Messaging Session	76

Displayed Report Fields

Calls Summary

Number of Incoming Calls: The number of calls that came into the Meridian Mail system.

Number of Outgoing Calls: The number of outgoing calls originated by the Meridian Mail system.

Total Calls: The total number of incoming and outgoing calls to the Meridian Mail system.

Total Connect Time (Hours): The total amount of connect time in hours due to all calls to and from the Meridian Mail system.

Equivalent Person Weeks: The number of 40-hour person-weeks required to handle the same service that Meridian Mail provided during the specified date/time interval.

Messaging Sessions

Number of Express Messaging Sessions: The total number of express messaging sessions.

Number of Call Answering Sessions: The total number of call answering sessions. This field registers a session only if a user both accessed and used Meridian Mail.

Number of Logon Sessions: The total number of logon sessions. This field registers a session only if a user both accessed and used Meridian Mail.

Number of Messenger Sessions: The total number of Visit Messenger sessions.

Messages Created

Number of Express Messages: The total number of express messaging messages created.

Number of Call Answering Messages: The total number of call answering messages created.

Number of Logon Compose Messages: The total number of logon compose messages created.

Number of Messenger Compose Messages: The total number of Visit Messenger compose messages created.

Accesses To Multimedia Applications

Announcements: The total number of announcements accessed.

Voice Menus: The total number of Voice Menus accessed.

Thru-Dialers: The total number of accesses to thru-dialers either from a mailbox or a thru-dial service.

Voice Forms: The number of times a Voice Form was accessed.

Fax on Demand: The total number of accesses to a Fax on Demand application.

Other Activity

Remote Notifications: The total number of remote notification attempts that occurred.

Deliveries to Non Users: The total number of attempts for deliveries to non-users.

Fax Call Backs: The total number of attempts for fax call backs.

Networking Sessions: The total number of networking sessions attempted. This field could include networking messages and NDNs that have been received.

AMIS Networking Sessions: The total number of AMIS networking sessions attempted.

Analysis and Corrective Actions

There are no corrective actions for this report. This report is informational and can be used for statistical information, cost effectiveness studies, and economic justifications for Meridian Mail services and service capacity.

Also, note that if the number of Call Answering sessions greatly exceeds the number of Call Answering Messages created, many callers are not leaving messages. This may reflect frustration on the part of the caller.

Chapter 8: Voice Mail Reports

Overview

This chapter contains reports that provide information on the Voice Mail usage on your Meridian Mail system(s).

Voice Messaging Activity Report

Use this report to summarize the messaging activity on your Meridian Mail system. This report is useful in determining the messaging usage patterns. It can help you determine if there are channel tie-ups occurring. This report is similar to the Meridian Mail Voice Messaging Detail report on the Meridian Mail system, but includes report field totals.

Figure 8-1
Voice Messaging Activity Report

Voice Messaging Activity Report
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	Internal Calls	External Calls	CA/EM Sessions	Logon Sessions	Average Session Length(Sec)	Longest Session Length (sec)	Call Ans Messages Created	Logon Messages Created	Average Message Length (sec)	Longest Message Length (sec)
95/08/24	09:00 - 10:00	240	72	131	181	71	1574	93	23	37	184
	10:00 - 11:00	256	74	157	173	58	713	119	24	30	194
	11:00 - 12:00	215	72	141	146	59	812	103	11	32	204
	12:00 - 13:00	146	72	117	101	58	679	80	11	35	218
	13:00 - 13:48	146	73	114	105	51	565	71	11	36	408
	13:48 - 14:00	31	16	22	25	45	265	18	6	35	109
	14:00 - 15:00	194	85	148	131	44	805	91	23	28	129
	15:00 - 16:00	211	75	149	137	46	467	87	13	30	99
	16:00 - 17:00	206	82	150	138	51	430	97	18	31	139
	17:00 - 18:00	119	61	105	75	51	538	75	18	32	231
	18:00 - 19:00	47	39	38	48	45	459	23	7	29	105
	19:00 - 20:00	11	24	17	18	49	333	14	8	19	58
	20:00 - 21:00	5	8	6	7	45	95	5	1	36	85
	21:00 - 22:00	2	29	7	24	44	225	6	4	27	61
	22:00 - 23:00	0	17	2	15	158	1317	1	2	95	156
95/08/24	Total:	1829	799	1304	1324			883	180		
	Average:	122	53	87	88	58	618	59	12	35	159
95/08/25	00:00 - 01:00	3	5	5	3	103	534	4	1	27	68
95/08/25	Total:	3	5	5	3			4	1		
	Average:	3	5	5	3	103	534	4	1	27	68
	Grand Total:	1832	804	1309	1327			887	181		
	Grand Average:					61	613			35	153

Report Filter

This report can be filtered by Period Length.

Displayed Report Fields

Date/Time Period: The date and reporting interval.

Internal Calls: The number of internal calls made from telephone sets within the private network (which the switch is connected to) during the specified time period.

External Calls: The number of calls made from telephone sets external to the switch during the specified time period.

CA/EM Sessions: The number of Call Answering (CA) and Express Messaging (EM) sessions during the specified time period.

Logon Sessions: The number of Voice Messaging (VM) logon sessions occurring during the specified time period.

Average Session Length (sec): The average length in seconds of call answering, express messaging, and logon sessions for the specified time period.

Longest Session Length (sec): The longest length in seconds of call answering, express messaging, and logon sessions for the specified time period.

Call Ans Messages Created: The number of call answering messages created during the specified time period.

Logon Messages Created: The number of logon messages created during the specified time period.

Average Message Length (sec): The average length of messages in seconds created during the specified time period. Since message length impacts disk storage, use this information to determine if enough disk space has been allocated for voice messages.

Longest Message Length (sec): The longest message created during the specified time period.

This report can be sorted by Date/Time Period, Internal Calls, External Calls, CA/EM Sessions, and Logon Sessions. The default sort is by Date/Time Period.

Analysis and Corrective Actions

Total the number of logon sessions and the number of Express Messaging and Call Answering sessions. If the total does not equal the total number of calls on your system, there is a system problem or possible hacker activity. Also, look at the Excessive Incomplete Voice Mail Accesses Alert.

Ideally, the number of CA/EM sessions should be close to the number of CA/EM messages created. The difference arises when callers either hang up or transfer the call to an attendant. Try to determine the reasons for this. Are greetings too long or unfriendly? Run the Call Answering/User Responsiveness Report to determine which mailboxes have a high percentage of “No Message” calls. Are instructions too complex? If CA/EM number disparity is too high, the users may need additional training on these features.

Also, look for high numbers of calls and messages that are too long. This is an indication that channels may be tied up, thus preventing others from accessing your system. If the calls that are tying up the channels are from outside the switch, you may need to increase the number of channels on your system.

Mailbox Counts Report

Use this report to count the number of mailboxes by Class of Service (COS), department, and NMS location.

Note: The Reporting Interval is not required when running this report.

Figure 8-2
Mailbox Counts (Class of Service) Report

Mailbox Counts
95/11/01

Central Offices

Class Of Service	Description	Mailbox Count
0		9
1	20m5d	301
3	40m5d	19
5	60m5d	6
6	20m0d	5
7	40m0d	5
8	60m0d	4
9	100m0d	19
		368

Displayed Report Fields (Class of Service)

Class Of Service: The Class of Service.

Description: The Class of Service description.

Mailbox Count: The total number of mailboxes.

Figure 8-3
Mailbox Counts (Department) Report

Mailbox Counts
95/11/01

Central Offices

Department	Mailbox Count
	242
1426	1
7387	1
9P30	3
9P32	1
9V22	5
9V23	2
9V32	2
AB00	1
AB02	1
AB05	2
AB07	1

Displayed Report Fields (Department)

Department: The department number.

Mailbox Count: The total number of mailboxes.

Figure 8-4
Mailbox Counts (NMS Location ID) Report

Mailbox Counts
95/11/01

Central Offices

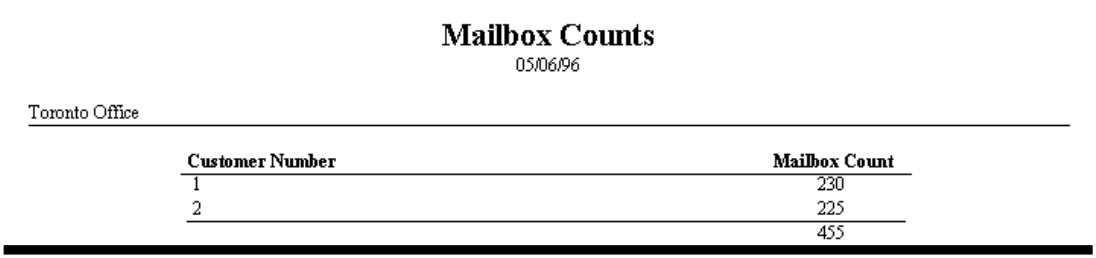
NMS Location ID	Mailbox Count
0	368
	368

Displayed Report Fields (NMS Location ID)

NMS Location ID: The NMS location ID.

Mailbox Count: The total number of mailboxes.

Figure 8-5
Mailbox Counts (Customer Number) Report



Mailbox Counts
05/06/96

Toronto Office

Customer Number	Mailbox Count
1	230
2	225
	455

Displayed Report Fields (Customer Number)

Customer Number: The numeric identifier of a customer.

Mailbox Count: The total number of mailboxes by customer.

Analysis and Corrective Actions

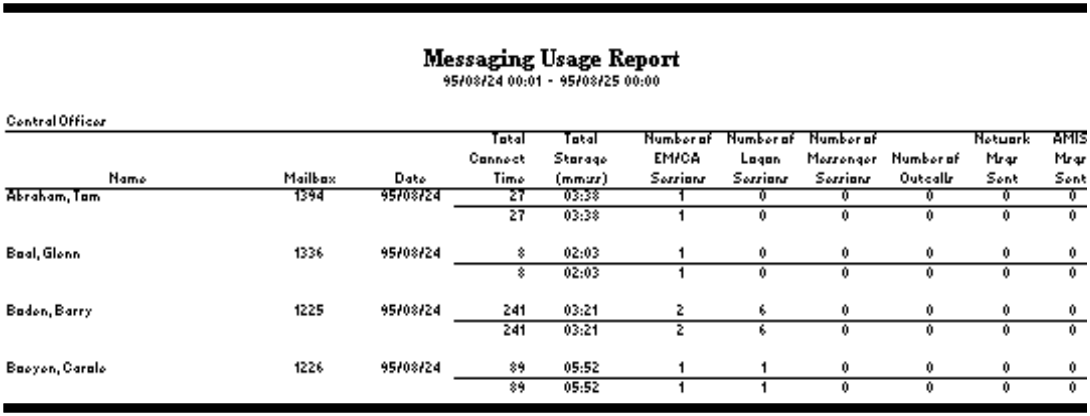
Note: The Mailbox Count reports overlay each other in print preview mode. To view the other two reports, move the top report to a different area of your screen.

These three reports are useful for statistical information. The COS variation shows how many mailboxes are using the personal Class of Service (for example, mailboxes which have custom settings and are not associated with a defined COS). These mailboxes must be administered individually.

Messaging Usage Report

Use this report to gain information on the messaging activity of individuals or departments. The report gives information on call answering, voice messaging, and network usage by user by day.

Figure 8-6
Messaging Usage Report



Messaging Usage Report
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Name	Mailbox	Date	Total Connect Time	Total Storage (mm:ss)	Number of EM/CA Sessions	Number of Logon Sessions	Number of Messenger Sessions	Number of Outcalls	Network Msgs Sent	AMIS Msgs Sent
Abraham, Tom	1394	95/08/24	27	03:38	1	0	0	0	0	0
			27	03:38	1	0	0	0	0	0
Baal, Glenn	1336	95/08/24	8	02:03	1	0	0	0	0	0
			8	02:03	1	0	0	0	0	0
Baden, Barry	1225	95/08/24	241	03:21	2	6	0	0	0	0
			241	03:21	2	6	0	0	0	0
Baeyen, Carole	1226	95/08/24	89	05:52	1	1	0	0	0	0
			89	05:52	1	1	0	0	0	0

Report Filters

This report can be filtered by COS, Department, EM/CA Calls, Logon Calls, Mailbox, Messenger Calls, Name, Networking Messages, NMS Location ID, Period Length, Total Connect Time, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The name of the mailbox owner.

Mailbox: The number of the mailbox.

Date: The mailbox usage on the date specified.

Total Connect Time: The total amount of time in seconds that the mailbox was connected to the voice messaging service (Call Answering, Express Messaging or Visit Messenger) on the specified date.

Total Storage (mm:ss): The total amount of disk space used by the mailbox in minutes and seconds. The storage used also contains the greetings.

Number of EM/CA Sessions: The total number of Express Messaging and Call Answering sessions on the specified date.

Number of Logon Sessions: The total number of logon sessions on the specified date.

Note: The number of invalid password attempts are shown.

Number of Messenger Sessions: The total number of Visit Messenger sessions on the specified date.

Number of Outcalls: The numbers of outcalls originated by Meridian Mail on the specified date.

Network Msgs Sent: The total number of messages sent through Meridian Mail Networking and AMIS Virtual Node Networking on the specified date.

AMIS Msgs Sent: The total number of AMIS Networking messages sent on the specified date.

Grand Total: The report fields are totaled at the bottom of the report. Note that the Grand Total Storage field is an average of the Total Storage (mm:ss) of all users listed in the report.

The report can be sorted by Name, Mailbox, Date/Time, and Total Connect Time. The default sort is by Name.

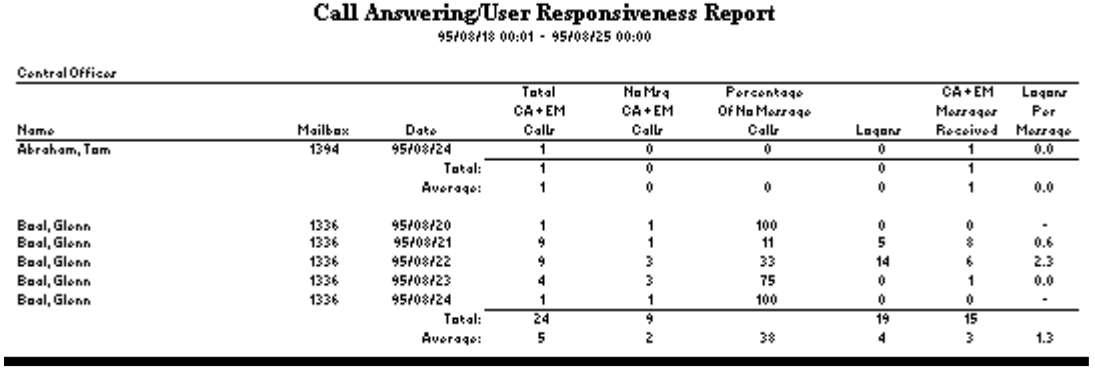
Analysis and Corrective Actions

Use this information for assessing load usage on individual mailboxes and for departments.

Call Answering/User Responsiveness Report

Use this report to determine daily call answering message activity and users' responsiveness to call answering messages. This report allows you to determine which users have a high percentage of no-message calls and which users are not logging in frequently enough to retrieve their new messages. This information is useful in assessing the quality of call coverage.

Figure 8-7
Call Answering/User Responsiveness Report



Call Answering/User Responsiveness Report

95/08/18 00:01 - 95/08/25 00:00

Central Officer

Name	Mailbox	Date	Total CA+EM Calls	No Msg CA+EM Calls	Percentage Of No Message Calls	Logons	CA+EM Messages Received	Logons Per Message
Abraham, Tom	1394	95/08/24	1	0	0	0	1	0.0
		Total:	1	0		0	1	
		Average:	1	0	0	0	1	0.0
Baal, Glenn	1336	95/08/20	1	1	100	0	0	-
Baal, Glenn	1336	95/08/21	9	1	11	5	8	0.6
Baal, Glenn	1336	95/08/22	9	3	33	14	6	2.3
Baal, Glenn	1336	95/08/23	4	3	75	0	1	0.0
Baal, Glenn	1336	95/08/24	1	1	100	0	0	-
		Total:	24	9		19	15	
		Average:	5	2	38	4	3	1.3

Report Filters

This report can be filtered by Class of Service, Department, Mailbox, Name, NMS Location, Period Length, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The name of the mailbox owner.

Mailbox: The mailbox number.

Date: The date of the report interval.

Total CA+ EM Calls: The total number of Call Answering and Express Messaging calls.

No Msg CA + EM Calls: The total number of calls that resulted in no message being left by the caller. A no-message call occurs when a caller is routed to call answering for a mailbox and does not leave a message.

Percentage of No Message Calls: The percentage of no-message calls to total calls.

Successful Logons: The total number of successful user logons and Visit Messenger sessions.

CA + EM Messages Received: The total number of Call Answering and Express Messaging messages that arrived during the reporting interval.

Logons Per Message: The ratio of logons + Visit Messenger sessions to Call Answering + Express Messaging messages.

The report can be sorted by Name, Date, Percentage Of No-Messages calls, and Logons Per Message. The default sort is by Name and Date.

Analysis and Corrective Actions

Look at the number of no-message calls compared to the total number of calls. A high percentage may indicate a problem with the greeting. Is there a personal verification or is there a greeting? However, if the user's greeting indicates vacation or other extended absence, a high percentage of no-message calls would be expected. Is the call coverage implementation for the user or the function inappropriate? The user or department may need education to help in providing better service to callers.

A low logon per message ratio may result from temporary absences. If the low ratio is not the result of vacations, business travel, or education, speak to the user about responsiveness and the fact that stored messages consume disk space. For voice mail to be effective, all users should be as responsive as possible to all voice mail messages.

For users with unusual responsive patterns, you may want to run a Mailbox Session Analysis report for details on the calls to their mailbox.

Mailbox Session Analysis Report

Use this report to obtain summary information on each call session to a particular mailbox. This report can provide information that may be useful in troubleshooting mailbox problems such as “delayed messages.” This report presents a detailed list of each call answer, express message, and logon call to a mailbox.

Figure 8-8
Mailbox Session Analysis Report (Meridian Mail Release 10)

Mailbox Session Analysis

05/06/1996 00:00 - 05/06/1996 23:59

Toronto Office

Date	Time	Session Length	Session Type	Call Type	Caller DN	Call Answer Messages Created	Other Messages Created	Unread Msg At Start Of Session	Msg Read During Session	Msg Arrived During Session	Unread Msg At End Of Session
05/06/1996	10:47	00:02:45	LOG	INT	1286	0	0	0	0	0	0
05/06/1996	10:56	00:00:04	CA	INT	1264	0	0	0	0	0	0
05/06/1996	11:12	00:01:05	LOG	INT	2241201	0	0	0	0	0	0
05/06/1996	11:13	00:00:08	LOG	INT	1465	0	0	0	0	0	0
05/06/1996	11:13	00:00:00	LOG	INT	2153551	0	0	0	0	0	0
05/06/1996	11:13	00:00:00	LOG	INT	1269	0	0	0	0	0	0
05/06/1996	11:18	00:00:25	LOG	INT	1401	0	0	0	0	0	0
05/06/1996	11:18	00:00:19	LOG	INT	1354	0	0	0	0	0	0
05/06/1996	11:19	00:04:17	LOG	INT	1953	0	0	0	0	0	0
05/06/1996	11:36	00:00:00	LOG	INT	8308	0	0	0	0	0	0
05/06/1996	11:40	00:02:06	LOG	INT	1464	0	1	0	0	0	0
05/06/1996	11:42	00:00:26	LOG	INT	1305	0	1	0	0	0	0
05/06/1996	12:58	00:01:39	CA	INT	1403	1	0	0	0	0	0
05/06/1996	13:26	00:02:04	LOG	INT	1305	0	0	1	1	0	0
05/06/1996	13:49	00:00:14	LOG	INT	1381	0	0	0	0	0	0
05/06/1996	13:56	00:00:00	LOG	INT	1545	0	0	0	0	0	0
05/06/1996	13:57	00:00:17	LOG	INT	1619	0	0	0	0	0	0
05/06/1996	14:25	00:00:46	CA	INT	1208	1	0	0	0	0	0
05/06/1996	15:10	00:00:45	LOG	INT	1141	0	0	0	0	0	0

Figure 8-9
Mailbox Session Analysis Report (Meridian Mail Release 11)

Mailbox Session Analysis

04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Date	Time	Session Length	Session Type	Call Type	Caller DN	DN Type	Total Messages Created	Total Msg At Start Of Session	Unread Msg At Start Of Session	Msg Read During Session	Msg Arrived During Session	Total Msg At End Of Session	Unread Msg At End Of Session
Abraham, Tom --- 1394													
04/30/96	11:40	00:00:09	LOG	INT	7619	IntExtens	0	4	1	1	0	0	0
04/30/96	11:52	00:00:07	CA	INT	7320	IntExtens	0	0	0	0	0	0	0
04/30/96	14:49	00:00:14	CA	INT	7427	IntExtens	0	0	0	0	0	0	0
04/30/96	16:41	00:00:09	LOG	INT	7619	IntExtens	0	4	1	1	0	0	0
Boal, Glenn --- 1336													
04/30/96	09:00	00:00:04	CA	EXT	5938564	Subscriber	0	0	0	0	0	0	0
04/30/96	13:20	00:00:16	CA	INT	7372	IntExtens	1	0	0	0	0	0	0
04/30/96	14:29	00:00:32	CA	INT	7396	IntExtens	1	0	0	0	0	0	0
04/30/96	14:44	00:02:38	LOG	INT	7336	IntExtens	0	3	2	2	0	0	0
04/30/96	15:02	00:00:19	CA	INT	7406	IntExtens	1	0	0	0	0	0	0
04/30/96	15:29	00:00:29	CA	INT	7406	IntExtens	1	0	0	0	0	0	0
04/30/96	15:58	00:01:03	LOG	INT	7336	IntExtens	0	5	3	3	0	0	0
04/30/96	17:31	00:00:42	CA	INT	7261	IntExtens	1	0	0	0	0	0	0
04/30/96	18:52	00:00:40	LOG	INT	7336	IntExtens	0	5	1	1	0	0	0
04/30/96	19:46	00:00:02	CA	INT	7260	IntExtens	0	0	0	0	0	0	0
Boden, Barry --- 1225													
04/30/96	06:30	00:00:17	LOG	EXT	7450753	Subscriber	0	8	0	0	0	0	0
04/30/96	09:14	00:00:51	CA	EXT	3442380	Subscriber	1	0	0	0	0	0	0
04/30/96	09:43	00:01:13	CA	INT	7459	IntExtens	1	0	0	0	0	0	0
04/30/96	09:47	00:02:15	CA	INT	7442	IntExtens	1	0	0	0	0	0	0
04/30/96	09:47	00:08:24	LOG	INT	7225	IntExtens	0	11	3	4	1	0	0

Report Filters

This report can be filtered by Mailbox, Name, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Header: User Name, Mailbox Number: The header information provides the user's name and the mailbox number.

Date/Time: The date and time of the call.

Session Length: The length of the session in hours, minutes, and seconds (hh:mm:ss).

Session Type: The type of session. LOG = logon, CA = Call Answering, and EM = Express Messaging. This field includes the count of invalid login attempts (that is, where session length is 0).

Call Type: The type of the call (internal or external) to the switch.

Caller DN: The telephone number that is calling into the mailbox. This field can contain four digits (mailbox), five or six digits (trunk group and member number), the last seven digits of a telephone number, or asterisks (*) if the data coming from the switch is null.

DN Type: For MM11 only. The Directory Number (DN) type as described in Table 5-1.

Total Messages Created: For MM11 only. The total number of call answer messages and other messages created.

Total Msg At Start Of Session: For MM11 only. The total number of messages available at the beginning of the session.

Total Msg At End of Session: For MM11 only. The total number of messages available at the end of the session.

Call Answer Messages Created: For MM10 only. The total number of call answering messages created by Call Answering or Express Messaging during the specified report interval.

Other Messages Created: For MM10 only. The total of all other types of messages (Composed, Reply, and Forwarding) messages created during the logon session.

Unread Msg At Start Of Session: The total number of unread messages at the start of the session. (Valid only for Logon Sessions.) “Read” messages saved as “new” by VMUIF users are counted as “unread.”

Msg Read During Session: The total number of unread messages which were read during the session. (Valid only for Logon Sessions.).

Msg Arrived During Session: The total number of messages that arrived during the session. (Valid only for Logon Sessions).

Unread Msg at the End of Session: The total number of unread messages at the end of the session. (Valid only for Logon Sessions).

Analysis and Corrective Actions

Use this report to follow up on lack of user responsiveness. If users are not listening to their unread messages during each login, they are degrading responsiveness. Infrequent logons may also indicate a pattern of poor responsiveness.
If user-reported problems cannot be explained by this report, use the session trace utility in Admin Tools to obtain more information.

If the user is reporting “delayed messages,” check to see if unread messages exist at the end of the logon sessions. If there are, it might cause the user to think the message was not delivered until the next logon time; education concerning the user interface may be needed.

Inactive User Report

Use this report to obtain a list of mailboxes that have not been logged into since the end date/time specified. This information is useful for identifying mailboxes that are inactive because of unresponsiveness, nonuse, vacation, extended leave, and termination of the user.

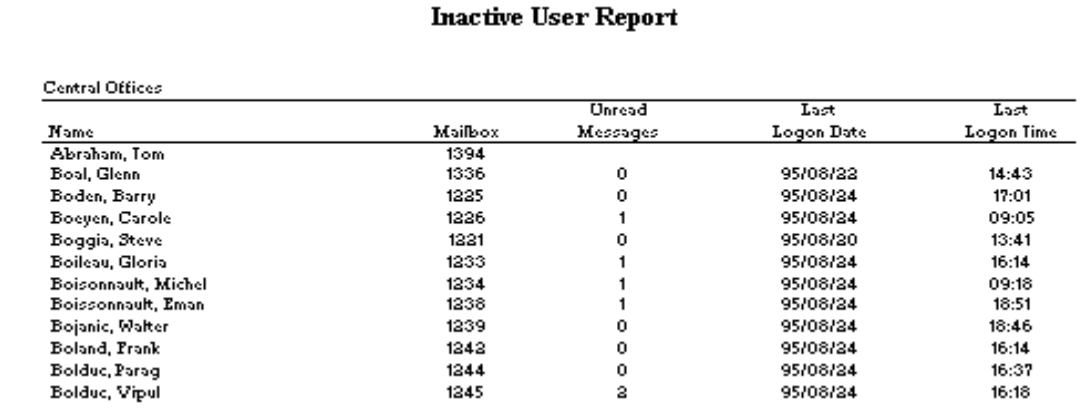
You must generate this report according to the following guidelines:

1. Run this report only on demand.

2. In the Reporting Interval dialog box, in the End Date field, enter the Logon Cut-off date.

3. Do not type anything in the Interval field. This field has no impact on this report.

Figure 8-10
Inactive User Report



Inactive User Report

Central Offices

Name	Mailbox	Unread Messages	Last Logon Date	Last Logon Time
Abraham, Tom	1394			
Boal, Glenn	1336	0	95/08/22	14:43
Boden, Barry	1225	0	95/08/24	17:01
Boeyen, Carole	1226	1	95/08/24	09:05
Boggia, Steve	1221	0	95/08/20	13:41
Boileau, Gloria	1233	1	95/08/24	16:14
Boisonnault, Michel	1234	1	95/08/24	09:18
Boissonnault, Eman	1238	1	95/08/24	18:51
Bojanic, Walter	1239	0	95/08/24	18:46
Boland, Frank	1242	0	95/08/24	16:14
Bolduc, Parag	1244	0	95/08/24	16:37
Bolduc, Vipul	1245	2	95/08/24	16:18

Report Filter

This report can be filtered by Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The user name associated with the mailbox. The report shows only the users whose last logon session preceded the end Date.

Mailbox: The mailbox number of the user.

Unread Messages: The number of messages that were left unread at the time of the last logon session.

Last Logon Date/Time: The date and time of the last logon or Visit Messenger session. If this field appears blank, the user has not logged on during the range of data in the database.

The report is sorted by User Name, Mailbox, and Unread Messages. The default sort is by Name.

Analysis and Corrective Action

For users identified by this report:

Is the mailbox owner on vacation or extended leave? Check the mailbox greeting to make sure that the greeting indicates the user's extended absence. Additionally, if you want to check the number of calls to, or storage in, the mailbox, run the Messaging Usage report with the filter set to the mailbox.

If the owner is being nonresponsive, follow your site procedures to deal with the problem. Meridian Mail training may be necessary to help the user become proficient at using all of the features of the system. If the user is no longer with the organization, delete the mailbox to free up storage and eliminate a potential target for hackers.

Top Users of Storage Report

Use this report to identify mailbox users who are currently using the largest amount of voice storage. This report can also be used to catch "problem" mailboxes that are consuming high amounts of storage and potentially jeopardizing all users on the same volume.

Note: The Reporting Interval is not required when running this report.

Figure 8-11
Top Users of Storage Report

Top Users Of Storage Report
95/08/25

Central Offices

Name	Mailbox	Storage Used	COS	NMS Location ID
Broadhead, Le	1418	512:28	9	0
Cameron, Tammy	1444	355:31	9	0
Bose, David	1295	132:10	0	0
Bongartz, Ken	1249	69:31	9	0
Brule, Mike	1469	61:14	9	0
Brazeau, Marc	1381	60:35	9	0
Buck, Peter	1438	57:24	8	0
Britman, Shyamasundar	1415	56:10	9	0
Braham, Rick	1311	54:21	9	0
Bourne, Brian	1334	53:00	9	0
Brunner-Walker, Dennis	1251	50:17	9	0

Report Filters

This report can be filtered by COS, Department, NMS Location ID, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The user name associated with the mailbox.

Mailbox: The mailbox number of the user.

Storage Used: A snapshot of the total disk storage used by the user mailbox in minutes and seconds taken at the date noted beneath the report title. The storage used also contains the greetings and personal verification.

COS: The Class of Service for the mailbox.

NMS Location ID: The NMS location ID of the user mailbox.

The report can be sorted by Name, Storage Used (descending order), and COS. The default sort is by Storage Used.

Analysis and Corrective Actions

The report shows the top 50 users of storage on the date of the date stamp. Some of the selected users may be exceeding their storage limit. Check individual mailbox Classes of Service for COS 0 to verify if they are exceeding their limit, or run the Users Exceeding COS Storage Limit Report for other Classes of Service. If users are exceeding the limit, first run the Call Answering/User Responsiveness or Inactive Users Report to see if they are logging in to check for messages. If not, check to see if they are on vacation, extended leave, or absent for some other reason. If they are currently employed, additional training in Meridian Mail procedures may be necessary. Additionally, you may consider shortening the maximum message length or the message retention time for users who are abusing storage guidelines.

Check the Disk Usage Monitor Report to see if any of the user volumes are approaching 85% capacity. If there are, move users with large mailboxes off of these full volumes onto user volumes with space capacity. To find the user volume on which a mailbox resides on Meridian Mail, do a "find user" for each of the largest users identified by this report. If the user's mailbox resides on a volume that is approaching capacity, move the mailbox to a volume that has spare capacity.

Users Exceeding COS Storage Limit Report

Use this report to identify mailboxes that are over the storage limit established by their Class of Service (COS).

Note: The Reporting Interval is not required when running this report.

Figure 8-12
Users Exceeding COS Storage Limit Report

Users Exceeding COS Storage Limit
95/11/01

Central Offices

Name	Mailbox	Storage Used (mm:ss)	COS Limit (mm:ss)	Percent Above Limit	COS	NMS Location ID
Bonnaventure, Dwight	1252	30:21	20:00	52	1	0
Boulos, Dave	1308	34:24	20:00	72	1	0
Brennan, Lise	1381	47:42	40:00	19	2	0
Broadhead, Le	1418	512:28	100:00	412	9	0
Buchanan, Glen	1396	35:14	20:00	76	6	0
Cameron, Tammy	1444	355:31	100:00	256	9	0
Carkner, Angelis	1414	25:49	20:00	29	1	0

Users Exceeding Storage Limit: 7

Report Filters

This report can be filtered by COS, Department, NMS Location ID, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The user name associated with the mailbox.

Mailbox: The mailbox number of the user.

Storage Used (mm:ss): The total storage used by the user's mailbox, including greetings, in minutes and seconds taken at the date noted beneath the report title.

COS Limit (mm:ss): Maximum storage allowed by the Class of Service.

Percent Above Limit: The storage exceeding the Class of Service as a percentage.

COS: The Class of Service of the user's mailbox.

NMS Location ID: The NMS location of the user's mailbox.

The report can be sorted by Name, Storage Used, Percent Above Limit, COS, and NMS Location ID. The default sort is by user name.

Analysis and Corrective Actions

This report presents the amount of disk storage for the most recent OM collection at the date of the download (date stamp under the report title).

If users are exceeding the limit, first run the Call Answering/User Responsiveness or Inactive Users Report to see if they are logging in to check for messages. If not, check to see if they are on vacation, extended leave, or absent for some other reason. If they are currently employed, additional training in Meridian Mail procedures may be necessary.
Note: Users with a personal Class of Service (COS = 0) are not included on this report (personal COS is not a system COS.). If your site uses personal Classes of Service only, this report will not be usable.

User Directory Report

Use this report to create a listing of Meridian Mail users sorted by department, name, or mailbox number.

Note: The Reporting Interval is not required when running this report.

Figure 8-13
User Directory Report

User Directory, ABC Co.
05/09/96

Toronto Office; Customer Number = 2

Name	Mailbox	Department
Boal, Glenn	1336	AB92
Boden, Barry	1225	AB14
Boeyen, Carole	1226	AB05
Boggia, Steve	1221	AB71
Boileau, Gloria	1233	AB65
Boisonnault, Michel	1234	AB65
Cachia, Ellen	1361	AB72
Cai, Kevin	1466	AB93
Caldarone, Ray	1389	AB61
Cameron, Doug	1243	AB71
Cameron, Gordon	1256	AB02
Cameron, Tammy	1444	AB34
Campbell, Anthony	1303	AB55

Report Filters

This report can be filtered by Department and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The user name (last name, first name).

Mailbox: The mailbox number of the user.

Department: The department associated with the mailbox.

The report can be sorted by Name, Mailbox, and Department.
The default sort is by Name.

Analysis and Corrective Actions

None.

Class of Service Report

Use this report to view the parameters assigned to a particular Class of Service (COS).

Note: The Reporting Interval is not required when running this report.

Figure 8-14
Class of Service Report (Meridian Mail User Interface - MMUI)

Class of Service

1 - 20m5d

Toronto Office

Voice Messaging Interface Type	MMUI	Delivery To Non-User Capability			Yes
Maximum Number of Sub-Mailboxes	N/A	Delivery To Non-User Restriction/Permission List			2
Personal Verification Changeable By User	Yes	Send Messages Via DNU If Mailbox Not Found			No
Voice Storage Limit [Minutes]	20	DNU DTMF Confirmation Required			No
Maximum Message Length [mm:ss]	20:00	Custom Revert Restriction/Permission List			2
Maximum Personal Greeting Length [mm:ss]	N/A	Remote Notification Capability			Yes
Delayed Prompts	Yes	Remote Notification Restriction/Permission List			4
Dual Language Prompting	No	Remote Notification Retry Limits And Frequency			
Dial Pulse Support	N/A	Busy	Retry Limit		3
Auto Logon	No		Retry Interval [hh:mm]		00:05
Login From Call Answering	N/A				
Lockout Duration [hh:mm]	N/A	No Answer	Retry Limit		10
Administrator Capability	No		Retry Interval [hh:mm]		00:15
Broadcast Capability	No				
Auto Play	No	Answered	Retry Limit		1
Callers Notified Of Busy Line	Yes		Retry Interval [hh:mm]		00:05
Receive Messages For Call Answering	N/A				
Maximum Call Answering Length [mm:ss]	05:00	RN Business Days			
Receive Composed Messages	Yes		Sunday	No	
Receive External Messages	Yes		Monday	Yes	
Message Waiting Indication Option	Any		Tuesday	Yes	
Skip To First New Message	N/A		Wednesday	Yes	
Announce Caller	N/A		Thursday	Yes	
Replay Header With Message	N/A		Friday	Yes	
Call Sender	N/A		Saturday	No	
External Call-Sender Restriction/Permission List	2				
Read Message Retention (days) ('0' implies that read messages are retained until the user deletes them manualy)	5				
Compose Capability	N/A	Receive AMIS Open Networking Messages			Yes
Send Messages To External Users	No	Compose/Send AMIS Open Network Messages			Yes
Treatment For Unsent Messages if The User Disconnects during Compose	N/A	AMIS Restriction/Permission List			3
Auto Deletion of Invalid PDL Addresses	No				
Retain Copy Of Sent Message	No	Extension Dialing Restriction/Permission List			2
Keypad Interface	Yes				

Report Filter

This report can be filtered by COS.

Displayed Report Fields

Class of Service: The Class of Service and description of all COS elements. See the *System Administration Guide* (NTP 555-7001-301) for a full description of the Class of Service fields.

Auto Deletion of Invalid PDL Addresses: Available only for MM11.

For both MM10 and MM11, this report has N/A in fields which correspond to features not available for MMUI.

This report is sorted by COS.

Figure 8-15
Class of Service Report (Voice Mail User Interface - VMUIF)

Class of Service
1 - First COS

Ottawa Office

Voice Messaging Interface Type	VMUIF	Delivery To Non-User Capability			Yes
Maximum Number of Sub-Mailboxes	8	Delivery To Non-User Restriction/Permission List			3
Personal Verification Changeable By User	N/A	Send Messages Via DNU If Mailbox Not Found			Yes
Voice Storage Limit [Minutes]	99	DNU DTMF Confirmation Required			Yes
Maximum Message Length [mm:ss]	99:00	Custom Revert Restriction/Permission List			3
Maximum Personal Greeting Length [mm:ss]	01:40	Remote Notification Capability			Yes
Delayed Prompts	Yes	Remote Notification Restriction/Permission List			2
Dual Language Prompting	N/A	Remote Notification Retry Limits And Frequency			
Dial Pulse Support	Yes		Busy	Retry Limit	3
Auto Logon	Yes			Retry Interval [hh:mm]	00:40
Login From Call Answering	Owner				
Lockout Duration [hh:mm]	01:40		No Answer	Retry Limit	10
Administrator Capability	N/A			Retry Interval [hh:mm]	01:40
Broadcast Capability	Yes				
Auto Play	N/A		Answered	Retry Limit	1
Callers Notified Of Busy Line	Yes			Retry Interval [hh:mm]	02:40
Receive Messages For Call Answering	Yes				
Maximum Call Answering Length [mm:ss]	10:40	RN Business Days			
Receive Composed Messages	Yes		Sunday	Yes	
Receive External Messages	Yes		Monday	No	
Message Waiting Indication Option	Any		Tuesday	Yes	
Skip To First New Message	Yes		Wednesday	No	
Announce Caller	Yes		Thursday	Yes	
Replay Header With Message	Yes		Friday	No	
Call Sender	Yes		Saturday	Yes	
External Call-Sender Restriction/Permission List	2				
Read Message Retention (days) ('0' implies that read messages are retained until the user deletes them manualy)	9				
Compose Capability	Yes	Receive AMIS Open Networking Messages			Yes
Send Messages To External Users	Yes	Compose/Send AMIS Open Network Messages			Yes
Treatment For Unsent Messages if The User Disconnects during Compose	Delete	AMIS Restriction/Permission List			1
Auto Deletion of Invalid PDL Addresses	N/A				
Retain Copy Of Sent Message	N/A	Extension Dialing Restriction/Permission List			N/A
Keypad Interface	N/A				

Report Filter

This report can be filtered by COS.

Displayed Report Fields

Class of Service: The Class of Service and description of all COS elements. See the *System Administration Guide* (NTP 555-7001-301) for a full description of the Class of Service fields.

For both MM10 and MM11, this report has N/A in fields which correspond to features not available for VMUIF.

This report is sorted by COS.

Analysis and Corrective Actions

None.

Chapter 9: Networking Reports

Overview

This chapter contains reports that provide information on networking.

Network Activity Report

Use this report and graph to provide statistical information by Remote Site ID for Meridian Mail networking (modem based), Enterprise networking (with MM11), and AMIS Virtual Node networking. The report provides measurements which indicate if the network has sufficient capacity to carry the traffic load. It also provides indicators of networking problems that may arise.

Figure 9-1
Network Activity Report

Network Activity Report
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	Remote Site ID	Messages Sent	Messages Received	Connect Time (mm:ss)	Total Sessions	Trouble Indicators: Failed Network Sessions	Blocked Attempts	Site Unavailable	NDN Delivered	NDN Received	Undeliver Messages
95/08/2<	09:00-10:00	55	1	1	07:31	2	0	0	0	0	0	0
95/08/2<	09:00-10:00	100	1	0	01:03	1	0	0	0	0	0	0
95/08/2<	09:00-10:00	343	1	0	03:10	1	0	0	0	0	0	0
			3	1	11:44	4	0	0	0	0	0	0
95/08/2<	10:00-11:00	1	0	1	01:15	1	0	0	0	0	0	0
95/08/2<	10:00-11:00	3	1	0	02:59	2	0	0	0	0	1	0
95/08/2<	10:00-11:00	70	1	0	01:51	1	0	0	0	0	0	0
			2	1	06:05	4	0	0	0	0	1	0
95/08/2<	11:00-12:00	55	1	1	08:50	2	0	0	0	0	0	0
			1	1	08:50	2	0	0	0	0	0	0
95/08/2<	12:00-13:00	1	1	0	02:00	1	0	0	0	0	0	0
95/08/2<	12:00-13:00	55	0	3	10:45	2	0	0	0	0	0	0
			1	3	12:45	3	0	0	0	0	0	0

Report Filters

This report can be filtered by Blocked Sessions, Failed Network Sessions, Messages Not Delivered, Number of NDNs, and Remote Site.

Displayed Report Fields

Date/Time Period: The date and interval of the specified period.

Remote Site ID: The remote site ID. Included are AMIS virtual nodes (for example, sites networked through AMIS Virtual Node networking). The site ID for AMIS is 501.

Messages Sent: The total number of messages sent to the specified remote site from the local site.

Messages Received: The total number of messages received from the specified remote site.

Connect Time (mm:ss): Total connect time between the local and remote site in minutes and seconds.

Total Sessions: The total number of completed sessions with the specified remote site.

Trouble Indicators

Failed Network Sessions: The total number of outbound network session attempts with the specified remote site that failed because the remote site did not have an available channel or modem.

Blocked Attempts: The total number of blocked session attempts with the specified remote site because a channel or modem was not available at the local site.

Site Unavailable: The number of times a session to the remote site failed because the network call was dropped or the network protocol failed.

NDN Messages Delivered: The total number of non-delivery notification (NDN) messages sent to remote users whose messages could not be delivered to mailboxes on the local system.

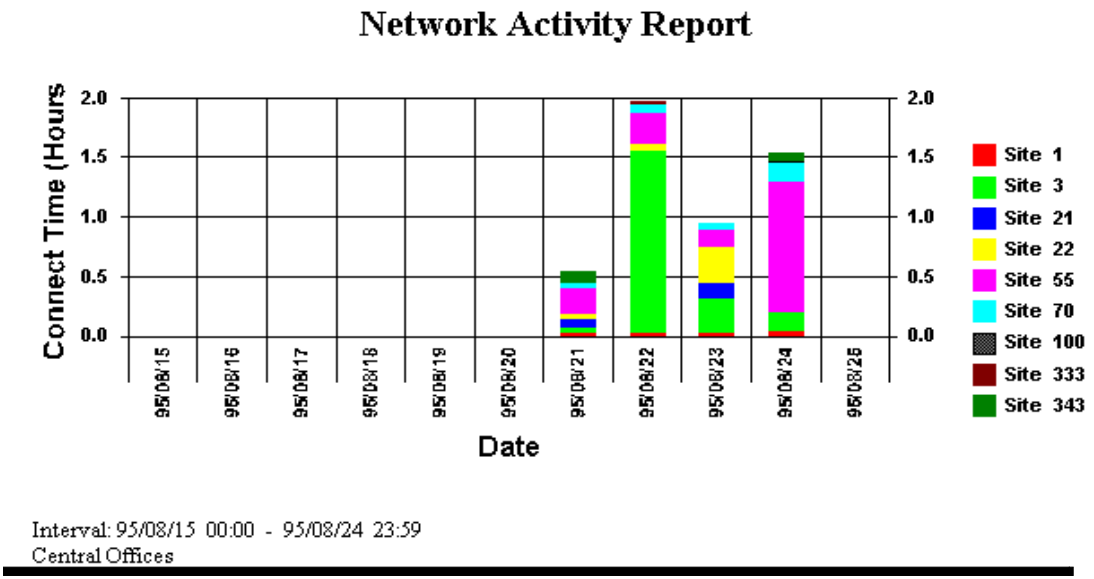
NDN Messages Received: The total number of non-delivery notification (NDN) messages received from the remote site because of non-delivery of messages composed by local users.

Undelivered Messages: The total number of messages that were not delivered. An Undelivered Message occurs when a successful networking session to the remote site cannot be established before the message stale timer expires.

The report can be sorted by Date/Time Period, Remote Site ID, Connect Time, Failed Network Sessions, Blocked Attempts, NDN Messages Delivered, and Messages Not Delivered. The default sort is by Date/Time and Remote Site ID.

A graph showing a stacked bar chart of network connect time versus the specified time periods is also presented. If there is no data collected by the tabular report, the graph does not display. Each bar in the chart is comprised of connect time to each site. If there are more than nine remote sites, only a solid bar representing the total connect time appears for each period.

Figure 9-2
Network Activity Report Graph



Analysis and Corrective Actions

This report shows networking (both Meridian Networking and AMIS Virtual Node Networking) traffic to each remote site. Indicators of capacity and networking problems from site to site are shown by the data and the graphical output. The Blocked Attempts field provides information that will help you to determine if the local system has sufficient capacity to carry the traffic which it is expected to handle. A large number of Blocked Attempts may indicate that additional networking modems are required.

Another aid for assessing local site networking capacity is to run the report with an interval over a typical business day from midnight to midnight. The graph produced shows total network connect time for each hour of the day.

If AMIS Virtual Node networking is not being used, then an estimate of the local site blocking percentage can be performed to see if the modem capacity is sufficient.

- The busiest hour's connect time from this graph can be compared to the maximum possible connect time (60 minutes each) for the number of networking modems on the system.

- The ratio of the connect time to maximum possible connect time is an approximate estimate of the probability that an inbound or outbound network attempt will be blocked.

- If the ratio exceeds 40%, consider adding modems to the local site.

Other indicators of networking problems include the following:

- A large number of Times Site Unavailable may indicate voice circuit quality or, possibly, marginal modem operation problems between sites. Run the SEER Query Report for the time interval with filters set to capture classes 36 and 37 to see if any networking SEERs were generated for the failures.

- A large number of Failed Network Sessions indicates insufficient network modem or channel capacity at the remote site to handle the incoming networking calls.

- A large number of Undelivered Messages indicates that there are severe networking problems at the remote site. Alert the remote site's administrator to the likelihood that there is a problem with the site's networking. If multiple sites are experiencing the same problems, the local site's networking is the likely source of the problems.

AMIS Open Networking Activity Report

Use this report to show the AMIS Open networking activity over a specified time interval. The data provides indicators of networking problems. AMIS Virtual Node Networking activity is not included in this report.

Figure 9-3
AMIS Open Networking Activity Report

AMIS Open Networking Activity Report

95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	Messages Delivered	Messages Received	Connect Time	Completed Sessions	Trouble Indicators: Failed AMIS Sessions	Blocked Session Attempts	Time Site Unavailable	NDN's Received	Messages Not Delivered
95/08/24	09:00 - 10:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	10:00 - 11:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	11:00 - 12:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	12:00 - 13:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	13:00 - 13:48	0	0	00:00:00	0	0	0	0	0	0
95/08/24	13:48 - 14:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	14:00 - 15:00	1	1	00:01:47	0	0	0	0	0	0
95/08/24	15:00 - 16:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	16:00 - 17:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	17:00 - 18:00	4	0	00:03:49	0	2	0	2	0	0
95/08/24	18:00 - 19:00	1	0	00:00:56	0	0	0	0	0	0
95/08/24	19:00 - 20:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	20:00 - 21:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	21:00 - 22:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24	22:00 - 23:00	0	0	00:00:00	0	0	0	0	0	0
95/08/24		6	1	00:06:32	0	2	0	2	0	0

Report Filters

This report can be filtered by Blocked Session Attempts, Failed AMIS Sessions, Msgs Not Delivered, Number of NDNs, and Period Length.

Displayed Report Fields

Date/Time Period: The date and interval of the specified period.

Messages Delivered: The total number of messages sent through AMIS networking (excluding messages sent through AMIS Virtual Node networking).

Messages Received: The total number of messages received through AMIS networking.

Connect Time: Total connect time used by AMIS networking sessions in hours, minutes, and seconds.

Completed Sessions: The total number of completed AMIS networking sessions.

Trouble Indicators

Failed AMIS Sessions: The total number of failed AMIS sessions.

Blocked Session Attempts: The total number of blocked session attempts with the specified remote site.

Times Site Unavailable: The total number of times that the remote site was unavailable.

NDNs Received: The total number of non-delivery notification (NDN) messages received from the remote site.

Messages Not Delivered: The total number of messages that were not delivered. A Message Not Delivered occurs when a successful networking session to the remote site cannot be established before the message stale timer expires.

The report can be sorted by Date/Time, Connect Time, NDNs Received, Failed AMIS Sessions, Blocked Session Attempts, and Messages Not Delivered. The default sort is by Date/Time Period.

Analysis and Corrective Actions

This report shows AMIS Open Networking activity. Indicators of capacity and networking problems from site to site are provided by the data. The Blocked Session Attempts field provides information that will help you to determine if the AMIS network has sufficient capacity to carry the traffic it is expected to handle. A large number of Blocked Session Attempts may indicate that additional networking ports should be allowed for AMIS networking on the Network Options screen.

Other indicators of networking problems include the following:

- A large number of NDNs may indicate that a remote site may be experiencing system problems.
- The site was reached but some of the recipients could not be found.
- A large number of Failed Network Sessions may indicate voice circuit quality problems between sites.
- A large number of Times Site Unavailable may indicate that a site does not have sufficient capacity to handle incoming calls; or it has problems with its AMIS networking; or it may not have AMIS networking. Check to see if there are Messages Not Delivered.

Chapter 10: Outcalling Reports

Overview

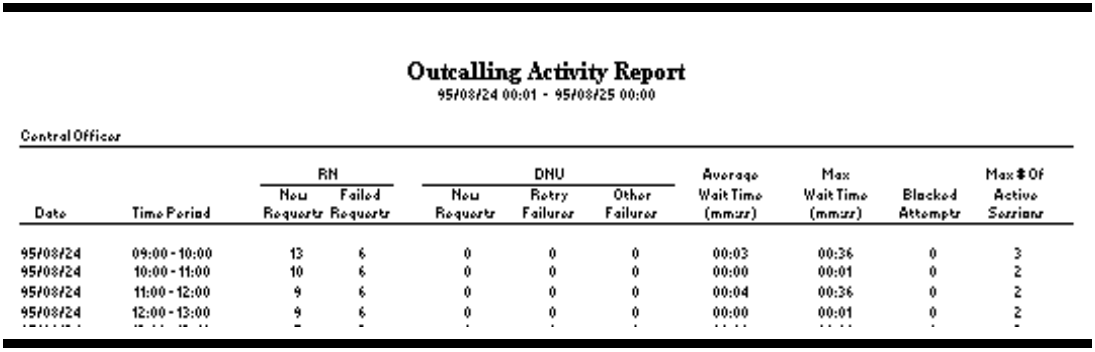
This chapter contains reports that provide information about calls originated by Meridian Mail for Remote Notification (RN) of mailbox users that new messages have arrived, and about message Delivery to Non-Users (DNU).

This information helps the administrator to ensure that the system is working correctly and also aids in troubleshooting problems that may arise.

Outcalling Activity Report

Use this report to show outcalling activity by time period and provide indicators to help determine the cause of outcalling problems. The administrator can use this report to monitor outcalling for excessive retries or for wait times which may be signs of impending system problems.

Figure 10-1
Outcalling Activity Report



Outcalling Activity Report

95/03/24 00:01 - 95/03/25 00:00

Central Officer

Date	Time Period	RN		DNU			Average Wait Time (mm:ss)	Max Wait Time (mm:ss)	Blocked Attempts	Max # Of Active Sessions
		New Requests	Failed Requests	New Requests	Retry Failures	Other Failures				
95/03/24	09:00 - 10:00	13	6	0	0	0	00:03	00:36	0	3
95/03/24	10:00 - 11:00	10	6	0	0	0	00:00	00:01	0	2
95/03/24	11:00 - 12:00	9	6	0	0	0	00:04	00:36	0	2
95/03/24	12:00 - 13:00	9	6	0	0	0	00:00	00:01	0	2

Report Filters

This report can be filtered by Avg Wait Time, DNU Retry Failures, Max Wait Time, Number of RN Failures, Other DNU Failures, and Period Length.

Displayed Report Fields

Date/Time Period: The date and interval of the specified period.

RN New Requests: The number of new Remote Notification (RN) requests that were presented to the Outcalling feature.

RN Failed Requests: The number of RN failure and retry requests. Failure is defined as the failure of the user to log on before the last retry attempt completes.

DNU New Requests: The total number of Delivery to Non-User (DNU) requests presented to the Outcalling feature.

DNU Retry Failures: The number of Delivery to Non-User requests cancelled due to exceeded busy, no answer, or "answered not played" limits; or the message was stale (too old).

DNU Other Failures: The number of Delivery to Non-User call attempts where the call could not be completed.

Average Wait Time (mm:ss): The average amount of time in minutes and seconds that it took the Outcalling feature to acquire the resources necessary (channel) to make the outcall during the specified time period.

Max Wait Time (mm:ss): The maximum amount of time in minutes and seconds that it took the Outcalling feature to make an outcall during a specific time period.

Blocked Attempts: The total number of times that an outcall attempt was blocked (for example, insufficient channels available).

Max # of Active Sessions: The maximum number of active outcalling sessions during the specified time period.

The report can be sorted by Date/Time Period, # of New Requests, # of RN Failures, Max Wait Time, and Avg. Wait Time. The default sort is by Date/Time Period.

Analysis and Corrective Actions

Check the number of RN and DNU failures. If the number is excessive, run the Outcalling Audit Trail Summary Report to isolate specific instances of failure.

Check the Average Wait Time, Max Wait Time, Blocked Attempts and Maximum # of Active Sessions fields to determine if the system has capacity-related

problems. If the Wait Times seem to be excessive and the Maximum Active Sessions are reaching the maximum number of active outcalling sessions configured for your system, consider increasing the number of channels used for Outcalling.

Outcalling Audit Trail Summary Report

Use this summary report to determine which call attempts are responsible for the high retry counts and failures detected by the Outcalling Activity Report.

Figure 10-2
Outcalling Audit Trail Summary Report

Outcalling Audit Trail Summary Report

95/06/13 00:00 - 95/06/18 00:00

Toronto

Name	Mailbox	Date	Time	Duration	Target Phone #	Call Type	Call Status	Retry Counter
KEANE, JANE	5858	95/06/13	08:22	00:00:51	96781981	RN	0	0
LAMOREAUX, Chuck	5916	95/06/13	08:22	00:00:27	918008225742	RN	0	0
KEANE, JANE	5858	95/06/13	08:24	00:01:26	94202509	RN	0	0
LAMOREAUX, Chuck	5916	95/06/13	08:28	00:00:23	918008225742	RN	0	1
WAGNER, ESTELLE	4357	95/06/13	17:04	00:01:25	5859	RN	0	0
Number Of Records: 5				00:04:32				
WAGNER, ESTELLE	4357	95/06/14	07:11	00:01:34	5859	RN	0	0
WAGNER, ESTELLE	4357	95/06/14	07:15	00:01:22	5859	RN	0	0
WAGNER, ESTELLE	4357	95/06/14	07:26	00:00:55	616132333546	RN	0	0
WAGNER, ESTELLE	4357	95/06/14	07:27	00:00:35	5859	RN	0	0
WAGNER, ESTELLE	4357	95/06/14	07:34	00:01:34	5859	RN	0	1

Report Filters

This report can be filtered by Mailbox, Name, Outcall Type, Target DN, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The mailbox owner's name.

Mailbox: The mailbox number from which the call originated.

Date: The date the call was made.

Time: The time the call was made.

Duration: The duration of the call in minutes and seconds.

Target Phone #: The telephone number that the mailbox called. This field is limited to a maximum of 30 digits. Calls placed to a pager service include the personal identification number (PIN). If the total number of digits is greater than 30, the first few digits of the pager service number will be truncated.

Call Type: The type of outcalling service that was used, either Remote Notification (RN) or Delivery to Non-User (DNU).

Call Status: This field displays one of the following call results:

- ***0 - Answered*** indicates that the destination number was answered and the message was heard by the called party.

- ***1 - Busy*** indicates that the RN or DNU target was busy. A retry attempt will be scheduled if the busy and no answer retries have not been exhausted.

- ***2 - Reorder*** indicates that during an outcall, the target DN was dialed, and a reorder tone was detected. The primary reasons for a reorder tone are: an invalid DN was called; there were no resources to complete the call, or there were access restrictions that the DN violated. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries are not exhausted.

- ***3 - No Answer*** indicates that an outcall to an RN or DNU target was placed and the call was not answered. A retry attempt will be scheduled if the no answer retries have not been exhausted.

- ***4 - Incomplete*** indicates that the outcall could not be completed. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries are not exhausted. If there is an accompanying SEER, follow the action as described in the SEER guide (NTP 555-7001-510).

- ***5 - Resource Delay*** indicates that the outcall was not completed because the line on which the call was to be made was taken away due to an incoming call which was given priority. The outgoing call is retried on a different channel. If this is a persistent problem, reserve channels for outcalling and make sure that no line DNs terminate on them.

- ***6 - RN Disabled*** indicates that the called party answered and pressed 3 to disable Remote Notification (RN).

- ***7 - No DTMF Confirmation*** indicates that the called party did not press 2 to hear a Delivery to Non-User (DNU) message (this field is not relevant if DTMF confirmation is not required by your system).

- ***8 - Not Played*** indicates that the called party disconnected before the DNU message was played.

- ***9 - Stale Date*** indicates that a user attempted to send a DNU message. The message was not delivered immediately (either because it was sent during a restricted time period or because the call was not answered and was, therefore, rescheduled). The message became stale during a permitted time period and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a nondelivery notification.

- ***10 - Illegal Window*** indicates that a user attempted to send a DNU message. The message became stale during an illegal time window and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a nondelivery notification.

- ***11 - SIT Tone*** indicates that during an outcall, the target DN was dialed, and a SIT tone was detected. A SIT tone is usually a series of tones followed by a voice message, indicating that this is an invalid DN. This causes RN for this user to be turned off by disabling all of the user's RN schedules. The administrator or user should define a new valid DN and reenable RN for the user. DNU is cancelled for the message, and the user receives a nondelivery notification.

- ***12 - Bad Called DN*** indicates that during an outcall, the target DN was dialed, and a bad called DN was detected by the local switch. (In other words, the target DN is invalid.) In the case of RN, this causes RN to be turned off by disabling all of the user's RN schedules. The administrator or user should define a new valid DN and reenable remote notification. In the case of DNU, DNU is cancelled for the message and the user receives a nondelivery notification.

- ***13 - Bad Billing DN*** indicates that a Bad Billing DN was encountered.

Retry Counter: The total number of retry attempts that were made at the time of the call attempt. This field increments by one each time

- a dialable number (DN) is busy and is retried

OR

- when multiple target DNs are defined, and they all have been tried and were either not answered or answered without a login taking place

The report can be sorted by Name, Mailbox, Date/Time, Target Phone #, or Call Type. The default sort is by Date/Time.

Analysis and Corrective Actions

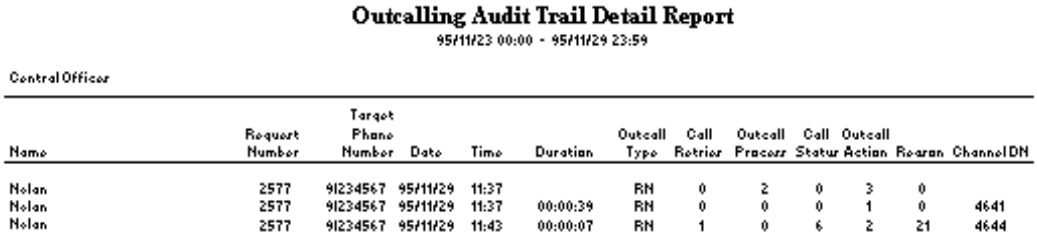
This report provides a list of the type and result of all outcalling attempts during the specified period.

If a particular RN target is associated with RN failures, the RN target may be invalid. Check to see if only one mailbox is associated with the invalid RN target. If so, contact the user and suggest that the target RN be corrected, or correct the RN through the Meridian Mail Interface (MMI). If multiple mailboxes are associated with the faulty RN target, determine why the RN target is no longer valid.

Outcalling Audit Trail Detail Report

Use this detailed report to trace the history of each request submitted to the outcalling feature.

Figure 10-3
Outcalling Audit Trail Detail Report



Outcalling Audit Trail Detail Report

95/11/23 00:00 - 95/11/29 23:59

Central Officer

Name	Request Number	Target Phone Number	Date	Time	Duration	Outcall Type	Call Retries	Outcall Process	Call Status	Outcall Action	Reason	Channel DN
Nolan	2577	91234567	95/11/29	11:37		RN	0	2	0	3	0	
Nolan	2577	91234567	95/11/29	11:37	00:00:39	RN	0	0	0	1	0	4641
Nolan	2577	91234567	95/11/29	11:43	00:00:07	RN	1	0	6	2	21	4644

Report Filters

This report can be filtered by Channel DN, Mailbox, Name, Outcall Type, Request Number, Target DN, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Name: The mailbox owner's name.

Request Number: The unique number that identifies the specific RN or DNU request. This field displays a negative number for DNU submissions or recoveries.

Target Phone Number: The telephone number that was called. This field is limited to a maximum of 30 digits. Calls placed to a pager service include the personal identification number (PIN). If the total number of digits is greater than 30, the first few digits of the pager service number will be truncated.

Date: The date the call was made.

Time: The start time of the call that was made.

Duration: The duration of the call in minutes and seconds.

Outcall Type: The type of outcalling service that was used, either Remote Notification (RN) or Delivery to Non-User (DNU).

Call Retries: The total number of retry attempts that were made at the time of the attempt. This field increments by one each time

- a dialable number (DN) is busy and is retried
- when multiple target DNs are defined and they all have been tried and were either not answered or answered without a login taking place.

Outcall Process: One of the following audit trail entry types is displayed:

- ***0 - Call Results*** indicates that a call has been made. Further information regarding the Call Status and Outcall Action is available in the adjacent fields to the right.
- ***1 - Validation*** indicates a checking process just before a call is made.
- ***2 - Submission*** indicates that a request has been made for an outcalling service.
- ***4 - Recovery*** indicates that messages for outcalling have been detected and submitted after a system reboot. This should not happen during normal operation.
- ***5 - Cancellation*** indicates that during recovery, requests for outcalling have been detected but have been cancelled since they are no longer valid. This should not happen during normal operation.

- ***7 - Logout/Admin*** indicates that one of two conditions has occurred. The first possibility is that a user has logged out with unannounced messages left in his or her mailbox. Normally, if a user is listening to a message when a new message comes in, the new message is announced after the user has finished listening to the other message. However, if the user hangs up before the message has finished playing, the new message will not be announced. (In this situation, the user will continue to be notified of messages.) The second possibility is that you have modified a user's account while there were unread messages in the user's mailbox.

Call Status: This field displays one of the following call results:

- ***0 - Answered*** indicates that an outcall to an RN or DNU target DN was placed and answered. In the case of RN, this means that the RN call was answered but the user did not log in on the same call to listen to the message. Remote notification will be rescheduled if the answered retries have not been exhausted. In the case of DNU, this means that the DNU call was answered, and the message was successfully delivered.

- ***1 - Busy*** indicates that the RN or DNU target DN was busy. A retry attempt will be scheduled if the busy and no answer retries have not been exhausted.

- ***2 - Reorder*** indicates that during an outcall, the target DN was dialed, and a reorder tone was detected. The primary reasons for a reorder tone are: an invalid DN was called; there were no resources to complete the call; or there were access restrictions that the DN violated. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted.

- ***3 - No Answer*** indicates that an outcall to an RN or DNU target was placed and the call was not answered. A retry attempt will be scheduled if the no answer retries have not been exhausted.

- ***4 - Incomplete*** indicates that the outcall could not be completed. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted. Follow the action described in the Maintenance Messages (SEERs) Reference Manual (NTP 555-7001-510) if there are SEERs accompanying this data.

- ***5 - Resource Delay*** indicates that the outcall was not completed because the line on which the call was made was taken away due to an incoming call which was given priority. The outgoing call is retried on a different channel. If this is a persistent problem, reserve channels for outcalling, and make sure that no ACD queues terminate on them.

- ***6 - RN Disabled*** indicates that during an RN attempt, the target DN was dialed, the call was answered, and 3 was pressed to disable remote notification. There will be no further RNs for this user until the user logs in to the mailbox again.

- ***7 - No DTMF Confirmation*** indicates that an outcall to a DNU target DN was placed and answered, but the caller did not provide the required DTMF confirmation (in other words, the user did not press 2 to hear the message). DNU will be rescheduled if the answered retries have not been exhausted.

- ***8 - Not Played*** indicates that during a DNU attempt, the target DN was dialed and the call was answered and disconnected before DNU could play its message. If the answered retries have not been exhausted, DNU will retry using the answered retry limits and intervals.

- ***9 - Stale Date*** indicates that a user attempted to send a DNU message. The message was not delivered immediately (either because it was sent during a restricted time period, or the call was not answered and was, therefore, rescheduled). The message became stale during a permitted time period and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a nondelivery notification.

- ***10 - Illegal Window*** indicates that a user attempted to send a DNU message. The message became stale during an illegal time window and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a nondelivery notification.

- ***11 - SIT Tone*** indicates that during an outcall, the target DN was dialed, and a SIT tone was detected. A SIT tone is usually a series of tones followed by a voice message, indicating that this is an invalid DN. This causes RN for this user to be turned off by disabling all of the user's RN schedules. The administrator or user should define a new valid DN and reenable RN for the user. DNU is cancelled for the message, and the user receives a nondelivery notification.

- ***12 - Bad Called DN*** indicates that during an outcall, the target DN was dialed, and a bad called DN was detected by the local switch. (In other words, the target DN

is invalid.) In the case of RN, this causes RN to be turned off by disabling all of the user's RN schedules. The administrator or user should define a new valid DN and reenable remote notification. In the case of DNU, DNU is cancelled for the message, and the user receives a nondelivery notification.

- ***13 - Bad Billing DN*** indicates that a Bad Billing DN was encountered.

Outcall Action: This field indicates the action performed on the request. The possibilities are

- ***0 - Continue*** indicates that the validation has been passed and a call attempt is to be made.
- ***1 - Defer*** indicates that another call attempt has been scheduled. RN calls to pagers are always rescheduled because the user may fail to receive the page. (However, if the user logs on before the next retry, the retry will be cancelled.)
- ***2 - Remove*** indicates that the outcall is successful.
- ***4 - Reset*** indicates that a problem was encountered retrieving information. Requests will be discarded and recovered from disk.
- ***5 - Delayed 1*** indicates that it was unable to obtain a channel on which to call out. Will retry later.
- ***6 - Delayed 2*** indicates that a channel was obtained, but it was taken away before the call was made. Will retry later.

Reason Codes: Reason codes indicate why an action occurred. Possible reason codes are as follows:

Code	DNU Interpretation
0	All OK
1	Past delivery window
2	Past system limit (retry, stale date)
3	Problem reading the message
4	Stale date time

Code	DNU Interpretation
5	Problem sending NDN, try again in 5 minutes
6	Message deleted by utility or file lost
7	Past system limit (no NDN given)
8	Outcalling not set up for customer
9	Had difficulty determining if the customer had Outcalling; will defer this request for validation/results stage and retry
10	Duplicate call made due to DNU recovery
11	Duplicate request discarded due to DNU recovery
12	Indicates invalid DN

Code	RN Interpretation
0	All OK
1	Notification was cancelled by login
2	Message arrival is outside the time period
3	Failed to read personal profile
4	Outcalling not set up for customer or user
5	Past retry limit
6	RN not turned on
7	RN already active
8	RN no longer active (RN should still be active)
9	Message of wrong priority
10	Reinstated old request
11	Schedule missing

Code	RN Interpretation
12	Failed to read the phone number
13	Failed to update the personal profile
14	No messages in the user's mailbox
16	Duplicate recovery entry for user
17	Notification was cancelled by another request
18	Non-MM8 profile; no component list
19	DN no longer valid
20	Invalid Client ID given
21	RN disabled by the called party
22	RN turned off due to multiple retry
23	Had difficulty determining if the customer had Outcalling; will defer this request for Validation/Results stage and retry
24	RN disabled by invalid DN

Channel DN: The DN associated with the voice channel used.

The report can be sorted by Date/Time, Target Phone Number, Name, Channel DN, Outcall Type, or Request Number. The default sort is by Name, Target Phone Number, and Date.

Analysis and Corrective Actions

This report provides a list of the type and result of all outcalling attempts during the specified interval.

Recurring outcalling failures on the same channel may indicate problems with the channel hardware. To determine the channel number from the Channel DN, go to the Meridian Mail Administrative screen and view the Channel Allocation Table (CAT).

1. If the system is connected to a Meridian 1 system, look under the SCN field and find Channel DN, and then look up the channel number.

2. If the system is connected to a non-Meridian 1 switch, look under the Channel DN field for the Channel DN, and then look up the channel number.

Run the Channel Problem Identification Report to see if the channel has unusual traffic patterns. You may need to check the DSP hardware and switch terminal number status as well.

If a user complains of not receiving Remote Notification, run the Audit Trail with the filter set for the user mailbox over the time interval in question. Then

- check to see if RN requests were processed for that user; if none exist, check the Mailbox Session Analysis report to see if any messages arrived during the interval

- if there was RN activity, check the RN targets used to see if they are valid

Chapter 11: Multimedia Applications Reports

Overview

This chapter outlines reports that provide information for tracking Multimedia Application activity on your system.

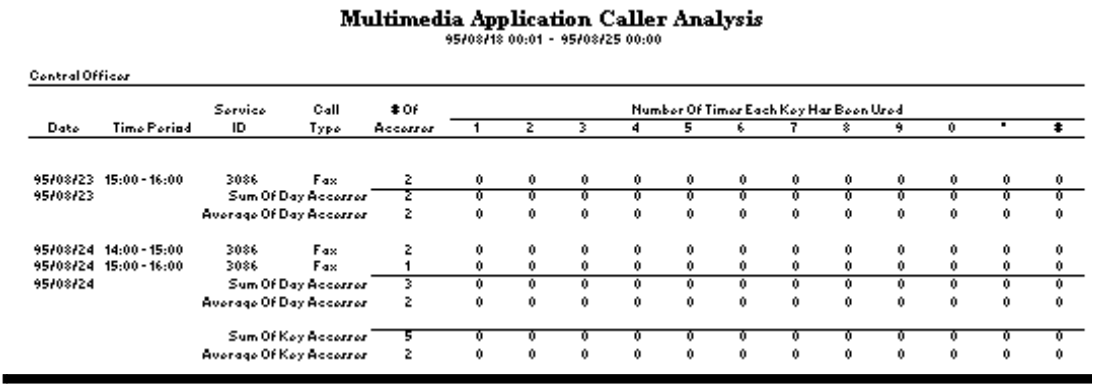
The information provided in the following reports for Voice Menu, Fax, and Announcement services can be used for troubleshooting capacity and usage problems. It shows which services are being used less frequently; this could indicate a problem with the application or the need to modify the application to make it more caller-friendly.

Note: Fax reports are available only if the system has the Fax on Demand option installed.

Multimedia Application Caller Analysis Report

Use this report to analyze the number of callers using the applications on your system. Data displayed for Voice Menus, Announcements, and Fax items include the total number of service accesses, and the service accesses by individual key. If a filter is set to retrieve information about a specific service, a graph is provided which plots the number of accesses over the report's time interval. If the service is a voice menu, a histogram of the key presses is provided. Only the tabular report prints if no data exists in the report.

Figure 11-1
Multimedia Application Caller Analysis Report



Multimedia Application Caller Analysis
95/08/18 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	Service ID	Call Type	# Of Accesses	Number Of Times Each Key Has Been Used											
					1	2	3	4	5	6	7	8	9	0	*	#
95/08/23	15:00 - 16:00	3086	Fax	2	0	0	0	0	0	0	0	0	0	0	0	0
95/08/23		Sum Of Day Accesses		2	0	0	0	0	0	0	0	0	0	0	0	0
		Average Of Day Accesses		2	0	0	0	0	0	0	0	0	0	0	0	0
95/08/24	14:00 - 15:00	3086	Fax	2	0	0	0	0	0	0	0	0	0	0	0	0
95/08/24	15:00 - 16:00	3086	Fax	1	0	0	0	0	0	0	0	0	0	0	0	0
95/08/24		Sum Of Day Accesses		3	0	0	0	0	0	0	0	0	0	0	0	0
		Average Of Day Accesses		2	0	0	0	0	0	0	0	0	0	0	0	0
		Sum Of Key Accesses		5	0	0	0	0	0	0	0	0	0	0	0	0
		Average Of Key Accesses		2	0	0	0	0	0	0	0	0	0	0	0	0

Report Filters

This report can be filtered by Call Type, Caller Accesses, Service ID, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Date/Time Period: The date and interval of the period.

Service ID: The one- to eight-digit identification number of the voice menu, fax, or announcement item.

Call Type: The type of call, as described in Table 11-1.

Table 11-1
PEGDATA Call Type Lookup

Description	MM10	MM11
Announcement	Yes	Yes
Menu	Yes	Yes
Fax Item	Yes	Yes
Thru-dial	No	Yes

Table 11-1 (Continued)
PEGDATA Call Type Lookup

Description	MM10	MM11
Time-of-Day Control	No	Yes
Voice Forms	No	Yes

 # Of Accesses: The total number of accesses to the service ID.

Number Of Times Each Key Has Been Used: The total number of accesses to the 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, *, and # keys for the service ID displayed.

The report can be sorted by Date/Time Period, Service ID, Call Type, and Caller Accesses. The default sort is by Service ID and Date/Time Period.

Note: To see an hourly profile like the one shown in the graph, set the report interval to one day from midnight to midnight. For longer time intervals, the graph presents a daily summary of accesses.

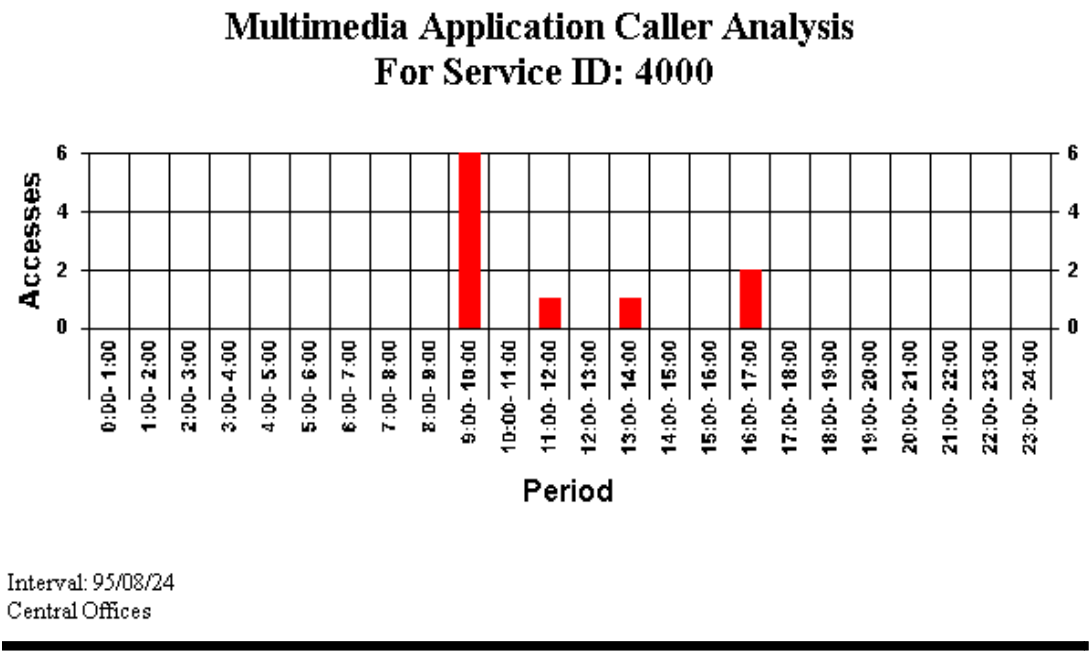
Analysis and Corrective Actions

This report provides a detailed breakdown of the accesses to the voice menus, announcements, and fax items to show usage traffic patterns.

The report is typically run with the filter set to select one service. For voice menus, a histogram of caller key-presses is provided to make it easy to check the pattern of option selection. If menu items that are near the end of the menu are used more frequently than earlier listed items, you may want to reorganize the menu. Call length would be reduced since callers would not have to wait as long for popular menu choices.

If the traffic pattern for a particular service increases or decreases from normal levels, consult the application owners to determine if there was some unusual reason for the change in traffic pattern. If the pattern is expected to return to acceptable levels, an adjustment to the system may not be necessary.

Figure 11-2
Multimedia Application Caller Analysis Graph



The reason for few or no accesses to a menu item may be

- poor description of the item
- the item is not required by the callers

Remove items that are not necessary, and replace them with items that will be of more use. Remember to rerecord the greetings and menu choices to reflect the changes.

Fax Deliveries Activity Report

Use this report to analyze Fax Call Back delivery activity over a specified time period. The report provides information that helps you determine if there are problems with the fax delivery service. A graphic profile of the faxes delivered over the report interval is provided. This and other fax reports are available only if you have the Fax on Demand software option.

Figure 11-3
Fax Deliveries Activity Report

Fax Deliveries Activity Report
95/08/24 00:01 - 95/08/25 00:00

Central Officer

Date	Time Period	New Requests	New Attempts	Number Of Retries	Number Of Successes	Number Of Failures	Average Wait Time (mm:ss)	Maximum Wait Time (mm:ss)	Blocked Attempts	Max. Active Sessions
95/08/24	09:00 - 10:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	10:00 - 11:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	11:00 - 12:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	12:00 - 13:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	13:00 - 13:48	0	0	0	0	0	00:00	00:00	0	0
95/08/24	13:48 - 14:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	14:00 - 15:00	1	0	0	0	0	00:00	00:00	52	0
95/08/24	15:00 - 16:00	2	3	2	2	0	39:22	98:46	45	2
95/08/24	16:00 - 17:00	0	0	4	0	1	00:01	00:01	0	1
95/08/24	17:00 - 18:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	18:00 - 19:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	19:00 - 20:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	20:00 - 21:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	21:00 - 22:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24	22:00 - 23:00	0	0	0	0	0	00:00	00:00	0	0
95/08/24		3	3	6	2	1	02:37	98:46	97	3
95/08/25	00:00 - 01:00	0	0	0	0	0	00:00	00:00	0	0
95/08/25		0	0	0	0	0	00:00	00:00	0	0

Report Filters

This report can be filtered by Avg Wait Time, Blocked Attempts, Failures, Max Wait Time, New Requests, and Period Length.

Displayed Report Fields

Date/Time Period: The date and interval of the period.

New Requests: The total number of new requests that were made for the Fax Call Back services during the specified time period.

New Attempts: The total number of attempts made to process the new requests for Fax Call Back services during the specified time period.

Number of Retries: The total number of attempts made to process old requests for Fax Call Back services during the specified time period because one of the following occurred at the destination number:

- The number was busy.
- There was no answer.
- The fax was not received at the destination.

Number Of Successes: The number of successful Fax Call Backs during the specified time period.

Number Of Failures: The total number of fax request failures cancelled by retry and other limits.

Average Wait Time (mm:ss): The average amount of time, based on all Fax Call Back attempts made during the specified time period, that the Fax on Demand feature needed to acquire the resources necessary to make the call.

Maximum Wait Time (mm:ss): This number represents the Fax Call Back attempt that took the longest amount of time during the specified time period to acquire the resources necessary to make the call.

Blocked Attempts: The number of attempts that were blocked due to unavailability of resources (for example, ports).

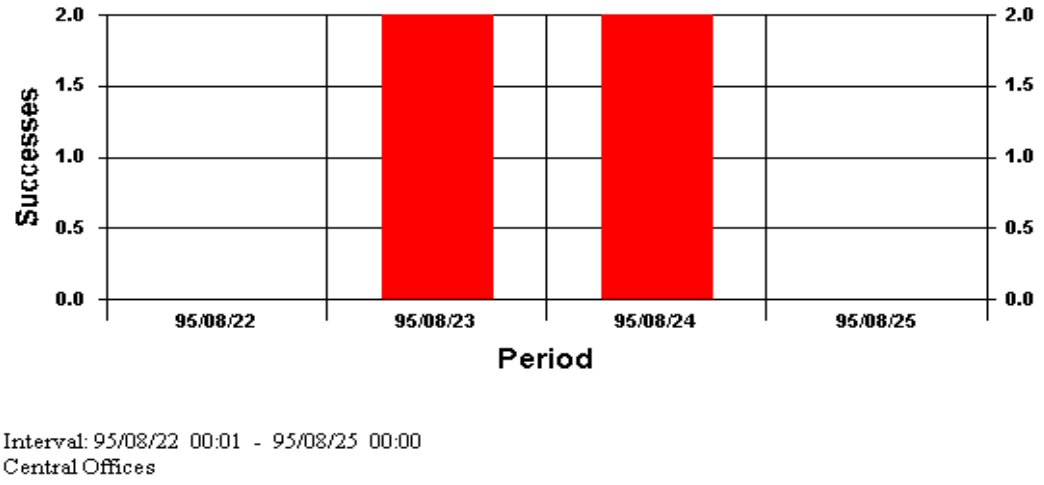
Max. Active Sessions: The maximum number of Fax Call Back sessions that took place concurrently.

The report can be sorted by Date/Time Period, New Requests, Number Of Failures, Average Wait Time, Maximum Wait Time, and Blocked Attempts. The default sort is by Date/Time Period.

Graph

A graph that shows the number of successes over the specified time period can also be displayed and printed.

Figure 11-4
Fax Deliveries Activity Report graph



***Note*:** To see an hourly profile of the faxes delivered, set the report interval to one day from midnight to midnight.

Analysis and Corrective Actions

This report shows the usage of Fax outcalling features. Low usage may indicate the following:

- The callers do not know how to use the application. If so, the application's prompts need to be worded more clearly.
- The callers are not aware that the service exists. Look for ways to promote the applications to potential callers.
- There are technical problems occurring. Investigate further and have the problems repaired.

A high number of retries indicates the following:

- The destination number was busy.
- There was no answer at the destination.
- A transmit error prevented the fax from being received.

To investigate specific instances of high retries, run the Fax Audit Trail Summary report for the corresponding time interval. The number of new attempts should equal the number of new requests. If the number of new requests is greater than the number of new attempts, then the system is not keeping up with the demand for fax outcalling. The system may require more multimedia channels.

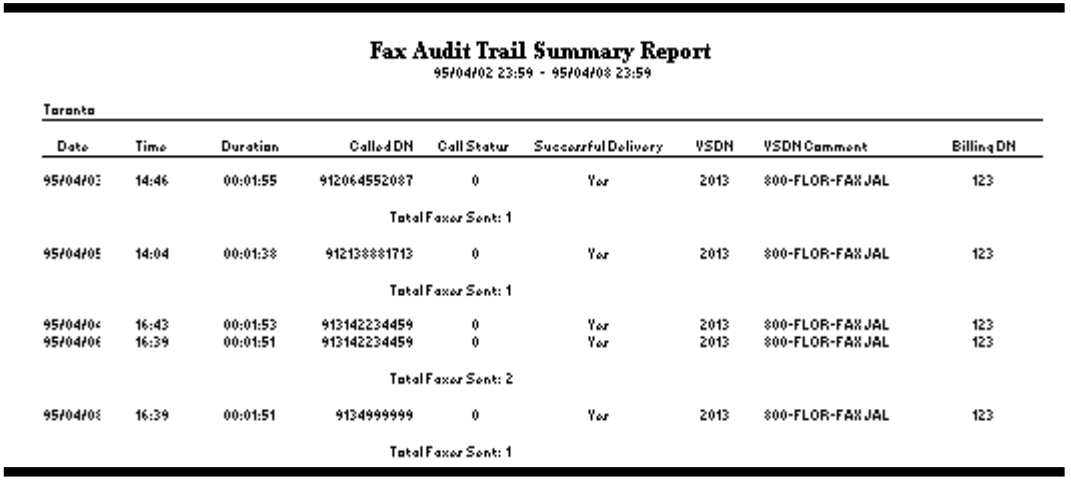
Wait time indicates how long the fax feature has to wait for a free channel. If the wait time is high, extra multimedia channels may be required for your system. The number of successful attempts would ideally equal the number of attempts. If the numbers are not equal, the following may be indicated:

- There may be a problem with the destination fax service, or the caller may not have entered a valid number. Run the Fax Audit Trail Summary report for the phone numbers where fax delivery failed.
- The switch might have outcalling restrictions even though Meridian Mail does not. For example, long distance calls may be restricted.
- The fax outcalling feature or dialing translation table may have been set up incorrectly.
- The retry time-outs may have expired if the channels were tied up for some time. High wait times also indicate this problem. Consider expanding the number of multimedia channels.

Fax Audit Trail Summary Report

Use this report to determine which fax delivery attempts are causing high retry counts and failures. This report is used in conjunction with the Fax Delivery Activity report. This and other fax reports are available only if you have the Fax-on-Demand software option.

Figure 11-5
Fax Audit Trail Summary Report



Fax Audit Trail Summary Report
95/04/02 23:59 - 95/04/08 23:59

Toronto

Date	Time	Duration	Called DN	Call Status	Successful Delivery	VSDN	VSDN Comment	Billing DN
95/04/03	14:46	00:01:55	912064552087	0	Yes	2013	800-FLOR-FAX JAL	123
			Total Faxes Sent: 1					
95/04/05	14:04	00:01:38	912138881713	0	Yes	2013	800-FLOR-FAX JAL	123
			Total Faxes Sent: 1					
95/04/04	16:43	00:01:53	913142234459	0	Yes	2013	800-FLOR-FAX JAL	123
95/04/06	16:39	00:01:51	913142234459	0	Yes	2013	800-FLOR-FAX JAL	123
			Total Faxes Sent: 2					
95/04/03	16:39	00:01:51	9134999999	0	Yes	2013	800-FLOR-FAX JAL	123
			Total Faxes Sent: 1					

Report Filters

This report can be filtered by Billing DN, Call Status, Called DN, Successful Delivery, VSDN, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Date/Time: The date and time the specified delivery was made.

Duration: The length of the call in hours, minutes, and seconds.

Called DN: The destination DN (fax phone number) of the call.

Call Status: This field displays the result of the call in a numeric return code:

- ***0*** indicates ***Transmitted***. The fax transmission completed successfully without error.

- ***12*** indicates ***No Carrier.*** The fax transmission was not started because the call was not answered, or was answered but not by a compatible fax device.

- ***13*** indicates ***Transmit error.*** The fax transmission started but was not completed successfully.

Successful Delivery: Indicates whether the fax call back attempt was successful (Yes or No).

VSDN: The voice service directory number (VSDN) of the Fax on Demand application which requested the call back attempt.

VSDN Comment: The title of the application in the VSDN table.

Billing DN: This is the billing DN for the application that originated the call.

This report can be sorted by Date/Time, Called DN, VSDN, and Billing DN. The default sort is by Date/Time.

Analysis and Corrective Actions

This report lists each Fax Call Back call attempt. Use this report to determine which fax delivery attempts are causing the high retry counts and failures that were detected by the Fax Activity report. To explore the cause of the problems in greater detail, run the Fax Audit Trail Detail Report.

Fax Audit Trail Detail Report

Use this report to help you determine why a specific fax delivery attempt has failed. The report allows you to trace the fax delivery process from the outcall request to final outcome. The results and the reason for the failure are provided. This and other fax reports are available only if you have the Fax on Demand software option.

Figure 11-6
Fax Audit Trail Detail Report

Fax Audit Trail Detail Report

95/04/03 23:59 - 95/04/08 23:59

Toronto

Fax Phone Number	Request#	Date	Time	Duration	VSDN	Retry Counter	Call Back Process	Call Back Status	Call Back Action	Reason	Channel DN
91234567890	1112	95/04/05	14:04	00:01:38	2013	0	0	0	Remove request	0	3754
91234567890	1115	95/04/06	16:39	00:01:51	2013	0	0	0	Remove request	0	3754
91234567890	1116	95/04/04	16:43	00:01:53	2013	0	0	0	Remove request	0	3754
91234567890	1115	95/04/08	16:39	00:01:51	2013	0	0	0	Remove request	0	3754
91234567890	1111	95/04/04	11:57	00:02:00	2013	0	0	0	Remove request	0	3754
91234567890	1114	95/04/05	15:07	00:01:56	2013	0	0	0	Remove request	0	3754
91234567890	1109	95/04/04	10:43	00:03:09	2013	0	0	0	Remove request	0	3754
91234567890	1110	95/04/04	11:17	00:03:38	2013	0	0	0	Remove request	0	3754
91234567890	1118	95/04/04	19:57	00:01:22	2013	0	0	0	Remove request	0	3754
91234567890	1119	95/04/04	20:03	00:00:44	2013	0	0	0	Remove request	0	3754

Report Filters

This report can be filtered by Billing DN, Call Back Status, Channel DN, Retry Counter, Target DN, VSDN, and Customer Number. The filter on Customer Number can use only the IS EQUAL TO operator. When filtered by Customer Number, the report appears as in Figure 8-12: the Customer Number appends to the site name and appears at the top of every page in the report. The report contains data only for the specified customer.

Displayed Report Fields

Fax Phone Number: The target DN of the fax delivery attempt.

Request #: The request identification number of the fax delivery attempt. This field displays a negative number for DNU submissions or recoveries.

Date/Time: The date and time the delivery attempt was made.

Duration: The length of the call in hours, minutes, and seconds (hh:mm:ss).

VSDN: The voice service directory number (VSDN) of the Fax on Demand application which requested the call back attempt.

Retry Counter: The total number of retries for this request that have been made since the first attempt. After each attempt, the counter increments by one.

Call Back Process: The type of audit trail entry:

- ***-1*** indicates ***Submission*** which means a request has been made for an outcalling service.
- ***0*** indicates ***Call Results*** which means Information regarding the Call Back Status and Call Back Action in the adjacent fields to the right.
- ***1*** indicates ***Validation*** which means a checking process just before a call is made.
- ***4*** indicates ***Recovery*** which means faxes for outcalling have been detected and submitted after a system reboot.

Call Back Status: The status of the call back attempt. The status will be one of the following return codes:

- ***0*** indicates ***Transmitted*** which means the fax transmission completed successfully without error.
- ***12*** indicates ***No Carrier*** which means the fax transmission was not started because the call was not answered, or was answered, but not by a compatible fax device.
- ***13*** indicates ***Transmit error*** which means the fax transmission started but was not completed successfully.

Call Back Action: This field indicates the action performed on the request. The possibilities for this field are as follows:

- ***Continue*** which means that the validation has been passed and a call attempt is to be made.
- ***Defer*** means that another call attempt has been scheduled.
- ***Remove Request*** means that the fax was successfully delivered.

- ***Reset*** means that a problem was encountered retrieving information from a particular disk volume. All requests for the affected volume that are of the same service type (for example, DNU) will be discarded and recovered.

- ***Delayed 1*** means that it was unable to obtain a channel on which to call out. Will retry later.

- ***Delayed 2*** means that a channel was obtained, but it was taken away before the call was made. Will retry later.

Reason Code: Reason codes indicate why an action occurred. The following are the possible reason codes:

Code	Interpretation
0	All OK
1	Past delivery window
2	Past system limit (retry, stale date, and so on)
3	Problem reading the message
4	Stale date time
5	Problem sending NDN, try again in 5 minutes
6	Message deleted by utility or file lost
7	Past system limit (no NDN given)
8	Fax on Demand not set up for customer
9	Had difficulty determining if the customer had Fax. Will defer this request for validation/results stage and retry.
10	Duplicate call made due to FP recovery
11	Duplicate request discarded due to FP recovery
12	Indicates invalid DN

Channel DN: The channel that was used to originate the call.

This report can be sorted by Date/Time, Fax Phone Number, Request #, VSDN #, and Channel DN. The default sort is by Fax Number, Request #, and Date/Time.

Analysis and Corrective Actions

Check Call Back Status for the failing fax deliveries. For incomplete calls, check to see if a SEER has been produced, and refer to the SEER NTP for information on solving the problem. For call transmission failure due to Resource Delay, your system may need more multimedia channels. If faxes are becoming stale (faxes are not being sent before the maximum time for delivery attempts expires), check the time windows to make sure that the faxes are not being sent during illegal time periods.

If the fax delivery attempt fails on Bad Called DN, dial the fax phone number to find out if the number is operational. The caller may have provided a wrong number.

Check the Call Back Action field for delays (Delay 1 and Delay 2). Delays indicate busy channels. If these problems with delays persist, your system may need more multimedia channels.

Recurring fax delivery failures on the same channel may indicate problems with the channel hardware. To determine the channel number from the Channel DN, go to the Meridian Mail Administrative screen and view the Channel Allocation Table (CAT).

- If the system is connected to a Meridian 1 system, look under the SCN field and find Channel DN, then look up the channel number.

- If the system is connected to a non-Meridian 1 switch, look under the Channel DN field for the Channel DN, then look up the channel number.

Run the Channel Problem Identification Report to see if the channel has unusual traffic patterns. You may need to check the DSP hardware and switch terminal number status as well.

Chapter 12: Bill-Back Files

Overview

This chapter outlines reports that provide information for usage-sensitive billing for services used. The reports give information on 800 Access, Voice Mail messaging, Outcalling, Networking, and Faxback Outcalling services. The reports are also presented as ASCII text files, in Comma-Separated Values (CSV) format, that can be used with external programs to facilitate billing of the usage.

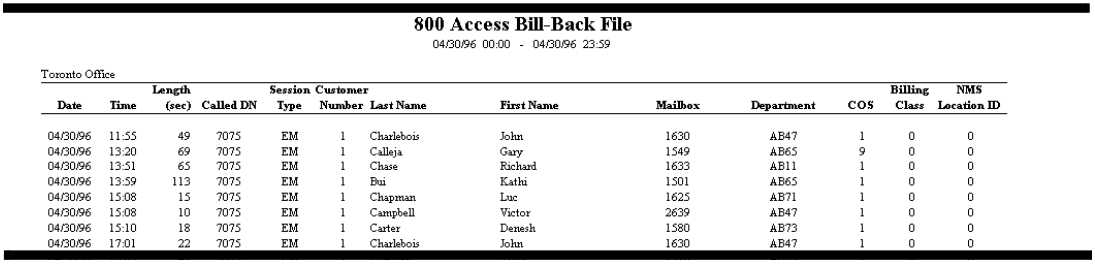
There are two ways to export data to a DOS file. One way is to view the report (using the Print Preview command in the File pull-down menu), select the Export icon (the one with a suitcase), and save the file in one of the formats listed in the drop-down list. The second way is to schedule the report for printing (using the Schedule command in the Options pull-down menu in the Report Customization window), and to provide a file name for the ASCII Data File (using the Options: Output command in the Customize: Report Palette window). The ASCII Data File will be overwritten whenever the report is run.

800 Access Bill-Back File

Use this report and ASCII text file to track 800 service usage. The report and file give all information necessary to charge back the cost associated with service use to the user. Each call over an 800 facility to a specific mailbox is captured by Name, Mailbox, and Department to allow for easy billing.

Note: In order for this report to distinguish between calls made on the 800 facility and calls originating from other sources, the 800 facility must terminate on a unique VSDN. The VSDN will typically be set to a logon service. (A separate VSDN must be set up for a logon service for local access.) The report is then run with the filter set with the called DN = 800 service VSDN.

Figure 12-1
800 Access Bill-Back File



800 Access Bill-Back File
04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Date	Time	Length (sec)	Called DN	Session Type	Customer Number	Last Name	First Name	Mailbox	Department	COS	Billing Class	NMS Location ID
04/30/96	11:55	49	7075	EM	1	Charlebois	John	1630	AB47	1	0	0
04/30/96	13:20	69	7075	EM	1	Calleja	Gary	1549	AB65	9	0	0
04/30/96	13:51	65	7075	EM	1	Chase	Richard	1633	AB11	1	0	0
04/30/96	13:59	113	7075	EM	1	Bui	Kathi	1501	AB65	1	0	0
04/30/96	15:08	15	7075	EM	1	Chapman	Luc	1625	AB71	1	0	0
04/30/96	15:08	10	7075	EM	1	Campbell	Victor	2639	AB47	1	0	0
04/30/96	15:10	18	7075	EM	1	Carter	Denesh	1580	AB73	1	0	0
04/30/96	17:01	22	7075	EM	1	Charlebois	John	1630	AB47	1	0	0

Report Filters

This report can be filtered by Billing Class, Called DN, COS, Department, and NMS Location.

Displayed Report Fields

Date: The date that the 800 service call took place.

Time: The time that the 800 service call took place.

Length (sec): The length of time of the call in seconds.

Called DN: The VSDN that the call terminated on. (If the filter is set appropriately, the VSDN will always equal the VSDN that the 800 service terminates on.)

Session Type: The type of session that the call originated from. LOG = Logon, CA = Call Answering, and EM = Express Messaging.

Customer Number: The numeric identifier of a customer.

Last Name: The last name of the mailbox owner.

First Name: The first name of the mailbox owner.

Mailbox: The mailbox number.

Department: The department of the mailbox owner.

COS: The Class of Service (COS) of the mailbox.

Billing Class: The associated billing class for the mailbox.

NMS Location ID: The NMS location ID where the mailbox resides.

The report can be sorted by Date/Time, Name, Mailbox, Department, COS, Billing Class, or NMS Location ID. The default sort is by Date.

Analysis and Corrective Actions

If the filter is set so that the called DN = 800 service termination DN, then all calls listed in this file were made over an 800 facility to a mailbox. Use this information to bill this service usage to the owner or the owner's department. If the primary sort key is Department or Mailbox, the tabular report will produce subtotals for each department or mailbox.

Voice Mail Usage Bill-Back File

Use this report or ASCII file to bill back based on the messaging activity of each mailbox. Each record in this report or ASCII file contains the total connect time and the new message time used by the specified mailbox. This report is normally generated as an ASCII file that can be used with an external bill-back program.

Figure 12-2
Voice Mail Usage Bill-Back File

Voice Mail Usage Bill-Back File

04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Customer Number	Name		Mailbox	Department	Session Length (sec)	Total Msg Length (sec)	SubMailbox Number	COS	Billing Class	NMS Location ID	Date
1	Budhwani	Douglas	1501	AB71	307	75	0	1	0	0	04/30/96
1	Buffam	John	1513	AB31	18	0	0	1	0	0	04/30/96
1	Bui	Kathi	1501	AB65	499	160	0	1	0	0	04/30/96
1	Bui	Leonas	1533	AB64	179	51	0	1	0	0	04/30/96
1	Builder	Vanier	1505	AB23	532	136	0	9	0	0	04/30/96
1	Bulanda	Blumip	1512	AB72	254	21	0	1	0	0	04/30/96
1	Burega	Karim	1502	AB61	5	0	0	1	0	0	04/30/96
1	Burgoyne	Liam	1516	AB31	229	116	0	1	0	0	04/30/96
1	Burke	Cathy	1511	AB31	128	95	0	1	0	0	04/30/96
1	Burkitt	Kathy	1538	AB93	212	65	0	1	0	0	04/30/96
1	Burry	Mike	1503	AB72	934	71	0	1	0	0	04/30/96
1	Butler	Wayne	1543	AB72	194	58	0	1	0	0	04/30/96

Report Filters

This report can be filtered by Billing Class, COS, Customer Number, Department, and Name.

Displayed Report Fields

Customer Number: The numeric identifier of a customer.

Name: The last and first name of the mailbox owner.

Mailbox: The mailbox to which the messaging activity is billed to.

Department: The department to which the mailbox belongs.

Session Length (sec): The total length of time in seconds that the mailbox was used in Logon, Call Answering, or Visit Messenger sessions. If your system has sub-mailboxes, there will be a summary of connect time in the report.

Total Msg Length (sec): The total length of new messages created and received on the mailbox on the specified date.

Sub-Mailbox Number: The sub-mailbox using the voice messaging service. Note that only mailboxes with the optional VMUIF user interface may have sub-mailboxes.

COS: The Class of Service the mailbox currently has.

Billing Class: The billing class associated with the specified mailbox.

NMS Location ID: The NMS Location ID number associated with the specified mailbox.

Date: The session start date.

The report can be sorted by Last Name, First Name, Department, COS, NMS Location ID, and Customer Number. The default sort is by Last Name and First Name.

Analysis and Corrective Actions

Use this report to generate an ASCII text file that can be used with an external bill-back file.

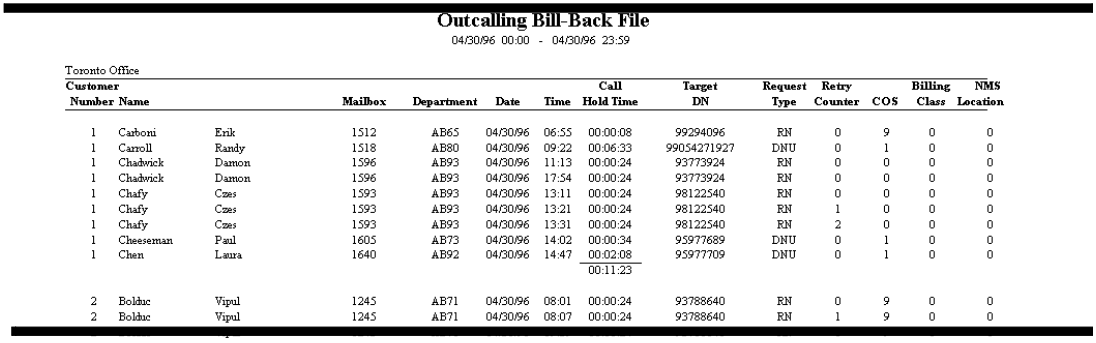
If a user is deleted from Meridian Mail before a download, an entry for the user will not appear in any reports generated after the download. During every download, the Meridian Mail directory file updates the directory table in the MMR database.

If the primary sort key is Department or Mailbox, the tabular report will produce subtotals for each department or mailbox.

Outcalling Bill-Back File

Use this report or ASCII file to bill back the cost of outcalling activity by mailbox. Each record in this report or ASCII file is a Remote Notification (RN) or Delivery to Non-User (DNU) call made by the specified mailbox. This report is normally generated as an ASCII file that can be used with an external bill-back program.

Figure 12-3
Outcalling Bill-Back File



Outcalling Bill-Back File

04/30/96 00:00 - 04/30/96 23:59

Toronto Office

Customer Number	Name		Mailbox	Department	Date	Time	Call Hold Time	Target DN	Request Type	Retry Counter	COS	Billing Class	NMS Location
1	Carboni	Erik	1512	AB65	04/30/96	06:55	00:00:08	99294096	RN	0	9	0	0
1	Carroll	Randy	1518	AB80	04/30/96	09:22	00:06:33	99054271927	DNU	0	1	0	0
1	Chadwick	Damon	1596	AB93	04/30/96	11:13	00:00:24	93773924	RN	0	0	0	0
1	Chadwick	Damon	1596	AB93	04/30/96	17:54	00:00:24	93773924	RN	0	0	0	0
1	Chafy	Czes	1593	AB93	04/30/96	13:11	00:00:24	98122540	RN	0	0	0	0
1	Chafy	Czes	1593	AB93	04/30/96	13:21	00:00:24	98122540	RN	1	0	0	0
1	Chafy	Czes	1593	AB93	04/30/96	13:31	00:00:24	98122540	RN	2	0	0	0
1	Cheeseman	Paul	1605	AB73	04/30/96	14:02	00:00:34	95977689	DNU	0	1	0	0
1	Chen	Laura	1640	AB92	04/30/96	14:47	00:02:08	95977709	DNU	0	1	0	0
							00:11:23						
2	Bolduc	Vipul	1245	AB71	04/30/96	08:01	00:00:24	93788640	RN	0	9	0	0
2	Bolduc	Vipul	1245	AB71	04/30/96	08:07	00:00:24	93788640	RN	1	9	0	0

Report Filters

This report can be filtered by Customer Number, Department, NMS Location, Outcall Type, and Retry Counter.

Displayed Report Fields

Customer Number: The numeric identifier of a customer.

Name: The last and first name of the mailbox owner.

Mailbox: The mailbox to which the messaging activity is billed.

Department: The department number of the active mailbox.

Date/Time: The date and time when the call was answered.

Target DN: The phone number that was the destination of the outcall.

Request Type: The type of outcall.

Retry Counter: The number of retries made to complete the call.

COS: The Class of Service the mailbox currently has.

Billing Class: The billing class associated with the specified mailbox.

NMS Location ID: The NMS Location ID number associated with the specified mailbox.

The report can be sorted by Last Name, First Name, Department, COS, Customer Number, and Mailbox. The default sort is by Last Name, First Name, and Date/ Time.

Analysis and Corrective Actions

Use these report results to bill back the outcalling message usage on your system. If the primary sort key is Department or Mailbox, the tabular report will produce subtotals for each mailbox or department.

Networking Usage Bill-Back File

Use this report or ASCII file to bill back the cost of networking activity of users. Each record in this report or ASCII file contains networking session time for each network message sent by the specified user. This report is normally generated as an ASCII file that can be used with an external bill-back program.

Figure 12-4
Network Usage Bill-Back File

Network Usage Bill-Back File

04/29/96 00:00 - 04/29/96 23:59

Toronto Office

Customer Number	Last Name	First Name	Mailbox	Date	Time	Duration	Remote Site ID	Priority	COS	Billing Class	Department	NMS Location ID
1	Cairns	Robert	1545	04/29/96	23:52	00:02:45	55	STD	1	0	AB80	0
						00:02:45						
2	Boocock	Evona	1258	04/29/96	09:01	00:00:43	21	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:04	00:00:40	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:05	00:00:40	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:06	00:00:40	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:06	00:00:41	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:07	00:00:40	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:08	00:00:40	22	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:11	00:00:40	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:12	00:00:39	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:13	00:00:39	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:13	00:00:40	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:14	00:00:39	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:15	00:00:39	55	UGT	1	0	AB07	0
2	Boocock	Evona	1258	04/29/96	09:21	00:00:52	333	UGT	1	0	AB07	0

Report Filters

This report can be filtered by Billing Class, COS, Customer Number, Department, NMS Location, and Remote Site.

Displayed Report Fields

Customer Number: The numeric identifier of a customer.

Last Name: The last name of the mailbox owner.

First Name: The first name of the mailbox owner.

Mailbox: The mailbox to which the networking activity is billed.

Date: The date of the network session**.**

Time: The time of the network session.

Duration: The length of time in hours, minutes, and seconds of the networking session, either Meridian Mail or AMIS Virtual Node networking.

Remote Site ID: The remote site ID to which the message was sent.

Priority: The priority the message was given.

COS: The Class of Service of the mailbox.

Billing Class: The billing class associated with the specified mailbox.

Department: The department associated with the mailbox.

NMS Location ID: The NMS Location ID number associated with the specified mailbox.

Subtotal and Total: The session length. The primary sort key is Mailbox.

The report can be sorted by Last Name, First Name, Date/Time, Department, Mailbox Priority, Location ID, COS, Customer Number, and Remote Site ID. The default sort is by Last Name, First Name, and Date/Time.

Analysis and Corrective Actions

Use these report results to bill back Meridian Mail and AMIS Virtual Node networking usage. The bill-back price structure can be based on time-of-day, duration, delivery location (Remote Site ID), Priority, and Billing Class. Networking messages and NDNs are not reflected in this total.

If the primary sort key is Department or Mailbox, the tabular report will produce subtotals for each department or mailbox.

Faxback Outcalls Bill-Back File

Use this report or ASCII file to bill back the cost of faxback calls made to deliver faxes from applications owned by departments. Each record in this report or ASCII file describes a faxback outcall. This report is normally generated as an ASCII file that can be used with an external bill-back program.

Figure 12-5
Faxback Outcalls Bill-Back File

Faxback Outcalls Bill-Back File

04/01/96 00:00 - 04/30/96 23:59

Toronto Office

Customer Number	VSDN	Billing DN	Date	Time	Call Hold Time	Target DN	Retry Counter	Call Status
1	3086	0	04/11/96	11:19	00:02:08	95977102	0	0
1	3086	0	04/16/96	19:40	00:00:25	95977517	0	12
1	3086	0	04/16/96	19:42	00:00:16	95977517	0	12
1	3086	0	04/16/96	19:44	00:00:09	95977517	0	12
1	3086	0	04/16/96	19:50	00:00:15	95977517	1	12
1	3086	0	04/16/96	19:52	00:00:05	95977517	1	12
1	3086	0	04/16/96	19:55	00:00:35	95977517	1	12
1	3086	0	04/16/96	20:01	00:00:03	95977517	2	12
1	3086	0	04/16/96	20:02	00:00:03	95977517	2	12
1	3086	0	04/16/96	20:05	00:00:03	95977517	2	12
1	3086	0	04/16/96	20:11	00:00:10	95977517	3	12
1	3086	0	04/16/96	20:12	00:00:12	95977517	3	12
1	3086	0	04/16/96	20:15	00:00:09	95977517	3	12
1	3086	0	04/16/96	20:21	00:00:04	95977517	4	12
1	3086	0	04/16/96	20:22	00:00:35	95977517	4	12

Report Filters

This report can be filtered by Billing DN, Counter Retry, Customer Number, Target DN, and VSDN.

Displayed Report Fields

Customer Number: The numeric identifier of a customer.

VSDN : The voice service directory number (VSDN) of the application which requested the faxback call.

Billing DN: This is the billing DN associated with the application.

Date: The date when the faxback call was answered.

Time: The time when the faxback call was answered.

Call Hold Time: The length of time in hours, minutes, and seconds of the faxback call. This field is totaled and subtotaled.

Target DN: The DN (phone number of the fax machine) that was the intended destination of the fax call.

Retry Counter: The number of retries that were made at the time of the attempt. This field is incremented by one each time a call fails to deliver the fax items requested.

Call Status: The status of the call. The field will contain one of the following return codes:

- ***0 -Transmitted*** indicates ***t***he fax transmission was completed without an error.
- ***12 - No Carrier*** indicates the fax transmission was not started because the call was not answered or was answered by an incompatible device.
- ***13 - Transmit Error*** indicates the fax transmission started but was not completed successfully.

The report can be sorted by VSDN, Billing DN, Date/Time, Customer Number, and Target DN. The default sort is by VSDN and Date/Time.

Analysis and Corrective Action

Use this information to bill back fax delivery outcalling usage. Check the Call Status to see if most attempts are successful. If not, you may want to investigate the failures. Use the Fax Audit Trail reports in Chapter 11, “Multimedia Reports,” to aid in problem determination.

If VSDN or Billing DN is used as the primary sort key, the tabular report will produce subtotals for each VSDN or Billing DN.

Chapter 13: Troubleshooting

Overview

This chapter describes how to use the MMR disks for partially or completely reinstalling MMR. As well, a section provides information on how to recover from common mishaps and errors. Finally, this chapter lists MMR error messages and actions to correct them. You can access the same messages and actions through the online help. A copy of the information appears in this chapter for your convenience.

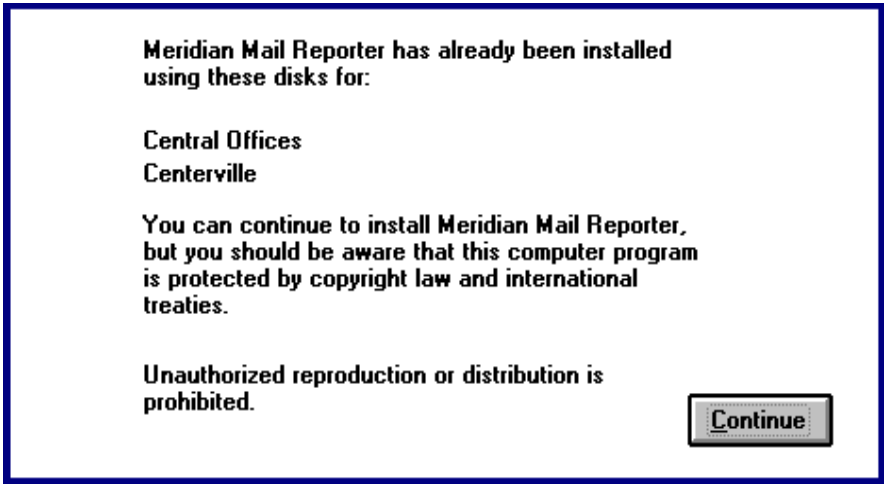
During installation, errors may occur for various reasons, such as lack of MMR PC disk space or random access memory (RAM). Check that your PC has at least the minimum hardware requirements as stated in Chapter 2, “Getting Started.” During installation of MMR, you should close any other applications.

If you experience errors running MMR, whether it be a database problem or something as simple as forgetting your MMR password, the troubleshooting actions may require you to use the MMR disks to help you resolve the problem.

Using the MMR Disks

If a troubleshooting action suggests that you reinstall a portion or all of MMR, you need to reinstall from the MMR disks. Please refer to Chapter 3, “Installing MMR,” for more information about installing MMR. During reinstallation, the MMR Welcome screen appears first, then the Installation Warning screen appears to notify you that MMR has already been installed using the disks.

Figure 13-1
Installation Warning screen


Meridian Mail Reporter has already been installed using these disks for:
Central Offices
Centerville
You can continue to install Meridian Mail Reporter, but you should be aware that this computer program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution is prohibited.
Continue

Then, the Password Registration and Destination Drive screens appear before the Overwrite screen.

Figure 13-2
Overwrite screen

Setup has detected an existing installation of Meridian Mail Reporter on your computer.
If you want to keep your existing installation, choose Exit to terminate Setup, rename the Meridian Mail Reporter directory, then run Setup again.
Otherwise, choose the options you wish to install from the list below, then choose Continue.
Password only
Data files & password
Program files & password
Complete installation
Continue
Help

The Overwrite screen offers you four installation options: Password only, Data files and password, Program files and password, and Complete installation. Depending on a troubleshooting action, you select one of the options by making sure that its option button is selected.

You should make a backup copy of the database files before you perform any installation operation (such as “Data files & password” or “Complete installation”) that will affect your database.

Recovering from Mishaps and Errors

The following recovery procedures detail why certain mishaps and errors occur, and how to recover from the problems.

To recover from a missed download

A download can fail if the modem at the Meridian Mail site is inadvertently turned off or if the quality of the line is poor. As well, if the MMR PC is running a second program while the download is in progress, and either the PC is not powerful enough to handle both programs or the second program is poorly behaved and does not yield the CPU, the second program can starve MMR Communications. Consequently, the download could fail due to a time-out on the link.

1. Open MMR Reports.

2. On the Maintenance menu, click Download.

The Immediate Download dialog box opens. It provides fields to select the site from which to download, whether to download just the SEER file or all files, and the start and end date/time for the download.

3. Set the download’s start and end dates, and times.

The start and end date of the download should correspond to the first and last day of data missed. For example, to download data from January 2nd, the start date and time would be 02/01/95 and 00:00:00, and the end date and time would be 03/01/95 and 00:00:00 respectively. A second is always subtracted from the end date and time.

Note: Meridian Mail only saves 48 hours worth of data; therefore, the interval between the start and end date should be no more than 2 days. However, MMR Reports allows you to enter an interval of 3 days back from the current date, considering that you may request a download from a Meridian Mail system located in a different time zone. Therefore, if Friday's download fails and you notice the missed download only on Monday, it then will be too late to retrieve Friday's data.

4. Make sure the All option button is selected.

5. Click OK.

To recover from a time-out during file transfer

You can create a multi-site download schedule that is too heavy for the PC. In order to maximize the number of sites supported in a multi-site configuration, MMR allows some overlap between the transfer of OM files from one Meridian Mail system and the merging of OM data from the preceding Meridian Mail system in the download schedule. Under normal circumstances, MMR can handle the overlap of these operations. However, if the PC is not powerful enough or if the database becomes extremely large, the merge operation in MMR Reports may begin to starve MMR Communications. Consequently, a time-out could occur during the file transfer.

1. Open MMR Reports.

2. On the Customize menu, click Download Schedule.

The Download Schedule Customization window appears.

3. Adjust the download schedule to allow more time than the 30% allowance for the system's download (including the merge operation) to complete successfully.

4. Click Save.

To merge files into the database if an error occurs after file transfer

A download error can occur after the file transfer is complete due to a temporary disk access problem. You can import the downloaded binary files.

1. Open MMR Reports.

2. On the Maintenance menu, click Import.

The Import dialog box opens. It includes fields to select the System ID (in a multi-site configuration), the files to import and their corresponding Meridian Mail file type, the directory in which the files reside, and the release of Meridian Mail running at the site. The binary files for a single-site configuration are stored in the directory \REPORTER\MMSITE\SITE1. For a multi-site configuration, a separate folder is created for each site (for example, SITE1, SITE2, SITE3, and so on) in the order that the Meridian Mail Systems table (in the Meridian Mail Reporter - Setup window) lists the sites.

3. Select the files to import.

Note: Import deals with one file at a time, and you must ensure that a complete set of binary files import at the same time in order to protect the database's integrity.

4. Click OK.

To fix a corrupted database

Also because of a temporary disk access problem, the MMR database can become corrupted. MMR provides three methods, each more increasingly severe, for dealing with the corruption.

1. Open MMR Reports.

Important: No other program can attempt to access the database while you perform this procedure. Therefore, terminate any program that may attempt to copy the database file.

2. On the Maintenance menu, click Repair Database.

A message appears and indicates if the repair was successful or not.

If the Repair Database operation does not fix the corrupted database, you should use the following procedure.

1. Open MMR Reports.

2. On the Maintenance menu, click Clear Database.

The command clears the entire OM database (but does not affect the system database), allowing MMR Communications to begin downloading data from scratch without deleting the site configuration data or any customized reports.

If the Clear Database operation does solve the database problem, you should use the following most severe procedure.

1. Insert MMR Disk 1 into the MMR PC's floppy drive.

For Windows 3.x/NT

a) Double-click Program Manager.

b) On File, click Run to open the Run dialog box.

c) Click the Command Line text box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

d) Click OK.

For Windows 95

a) Click Start, and then click Run to open the Run dialog box.

b) Click the Open box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

c) Click OK.

2. Click Continue in the MMR Setup Welcome, Installation Warning, Password Registration, and Destination Drive screens.

The Overwrite screen appears.

3. Make sure the Data files & password option button is selected.

4. Click Continue and follow the instructions on the screen.

MMR clears the OM database and the system database. Therefore, you must reenter site configuration and customization data after this procedure.

To stop interference from another newly installed program

Installing new software on a Windows 3.1 PC can affect programs already on the PC. If you install a new software package on the MMR PC after MMR is installed, the new package may overwrite one or more Dynamically Linked Libraries (DLLs) used by MMR. Consequently, it is strongly recommended that you dedicate the MMR PC to running only MMR. If you do install a new program and it appears to interfere with MMR, you can reinstall MMR (and the DLLs that it uses) without affecting either the OM or system databases.

1. Insert MMR Disk 1 into the MMR PC's floppy drive.

For Windows 3.x/NT

a) Double-click Program Manager.

b) On File, click Run to open the Run dialog box.

c) Click the Command Line text box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

d) Click OK.

For Windows 95

a) Click Start, and then click Run to open the Run dialog box.

b) Click the Open box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

c) Click OK.

2. Click Continue in the MMR Setup Welcome, Installation Warning, Password Registration, and Destination Drive screens.

The Overwrite screen appears.

3. On the Overwrite screen, make sure the Program files & password option button is selected.

4. Click Continue and follow the instructions on the screen.

To recover from hard disk problems or a virus

If you encounter problems because of a bad hard disk or a virus, you have to completely reinstall MMR from scratch.

1. Insert MMR Disk 1 into the MMR PC's floppy drive.

For Windows 3.x/NT

a) Double-click Program Manager.

b) On File, click Run to open the Run dialog box.

c) Click the Command Line text box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

d) Click OK.

For Windows 95

a) Click Start, and then click Run to open the Run dialog box.

b) Click the Open box, and then type the name of the disk drive and **setup**. For example, **a:setup** where a: is the floppy drive on the system.

c) Click OK.

2. Click Continue in the MMR Setup Welcome, Installation Warning, Password Registration, and Destination Drive screens.

The Overwrite screen appears.

3. On the Overwrite screen, make sure the Complete installation option button is selected.

4. Click Continue and follow the instructions on the screen.

Error Messages During Installation

You may encounter the following error messages during installation. If an error does occur, take the corrective action(s) described after the appropriate message.

The MMR Operational Measurements database cannot be configured

The MMR Operational Measurements database cannot be installed.

Action

1. Terminate MMR Setup.
2. Exit Windows.
3. Reboot the PC to effect a clean-up.
4. After the PC reboots, type **SHARE** at the DOS prompt and press Enter.
5. To start Windows, type **WIN** and press Enter.
6. Reinstall MMR.

The MMR System database cannot be configured

The MMR System database cannot be installed.

Action

1. Terminate MMR Setup.
2. Exit Windows.
3. Reboot the PC to effect a clean-up.
4. After the PC reboots, type **SHARE** at the DOS prompt and press Enter.
5. To start Windows, type **WIN** and press Enter.
6. Reinstall MMR.

Error Messages After Installation

You may encounter the following error messages after installation. If an error does occur, take the corrective action(s) described after the appropriate message.

An error occurred while updating the MMR Operational Measurements database

The database files may be corrupted.

Action

1. Click Cancel to terminate MMR Setup without saving any changes.
2. Run MMR Setup again and check the configuration; then, repeat the desired operation one step at a time. For example, delete all sites that need to be deleted and close MMR Setup. Then, run MMR Setup again and add all sites required.
3. If the error persists, double-click the MMR Reports icon and on the Maintenance menu, click Repair Database. This procedure attempts to repair the damaged database files. If this attempt fails, the database is corrupt beyond repair and needs to be recreated; therefore, go to Step 4. Otherwise, go to Step 5.
4. Restore the database files from a recent backup. If a backup is not available, go to Step 5.
5. Reinstall MMR Setup and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.
6. Double-click the MMR Setup icon to start MMR Setup.

Disk full, cannot access the database

The hard drive does not have enough free space for temporary working files.

Action

- Use File Manager or Explorer to delete files which occupy at least 250 kbytes and to make sure the Temporary directory is empty. If it is not empty, quit all applications and then delete any files in the directory.

Note: To generate a report, you must clear a much larger amount of free space (typically 10 Mbytes) on the hard drive.

Error reading the initialization file

The MMR.REF file is corrupt.

Action

1. Insert Meridian Mail Reporter Installation Disk 1 into the drive.
2. Perform the procedure, “Overwriting the Current MMR Installation,” as outlined in the online help.

> ***Note:*** To maintain your current database and programs, make sure the Password only option button is selected in the Overwrite screen. To maintain your current database, make sure the Program files & password option button is selected.

Invalid data in the selected cell

The wrong type of information was typed into this cell.

Action

1. Check the online help to verify the syntax of the information that you need to type into the cell.
2. Type the correct information into the cell.

Logon password not recognized

MMR Setup does not recognize your password.

Action

- Type your password again. If you cannot remember your password, perform the procedure titled “Changing your Password” in Chapter 3.

Out of memory. Please close other applications to free some memory

There is not enough memory to run MMR Setup.

Action

1. Close any extra applications that are currently running.
2. Double-click the MMR Setup icon to open MMR Setup.

Out of resources. Please close other applications to free some resources

There are not enough resources to run MMR Setup.

Action

1. Close any extra applications that are currently running.
2. Double-click the MMR Setup icon to open MMR Setup.

The MMR Operational Measurements database file cannot be opened

The Operational Measurements database file cannot be opened.

Action

1. Click OK to terminate MMR Setup.
2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.
4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.

5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

The MMR System database file cannot be opened

The system database file cannot be opened.

Action

1. Click OK to terminate MMR Setup.
2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.
4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.
5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

The site cannot be added to the database

The database files may be corrupted.

Action

1. Click Cancel to terminate MMR Setup without saving any changes.
2. Run MMR Setup again and check the configuration; then, repeat the desired

operation one step at a time. For example, delete all sites that need to be deleted and close MMR Setup. Then, run MMR Setup again and add all sites required.

3. If the error persists, double-click the MMR Reports icon and on the Maintenance menu, click Repair Database. This procedure attempts to repair the damaged database files. If this attempt fails, the database is corrupt beyond repair and needs to be recreated; therefore, go to Step 4. Otherwise, go to Step 5.
4. Restore the database files from a recent backup. If a backup is not available, go to Step 5.
5. Reinstall MMR Setup and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.
6. Double-click the MMR Setup icon to start MMR Setup.

The site cannot be deleted from the database

The database files may be corrupted.

Action

1. Click Cancel to terminate MMR Setup without saving any changes.
2. Run MMR Setup again and check the configuration; then, repeat the desired operation one step at a time. For example, delete all sites that need to be deleted and close MMR Setup. Then, run MMR Setup again and add all sites required.
3. If the error persists, double-click the MMR Reports icon and on the Maintenance menu, click Repair Database. This procedure attempts to repair the damaged database files. If this attempt fails, the database is corrupt beyond repair and needs to be recreated; therefore, go to Step 4. Otherwise, go to Step 5.
4. Restore the database files from a recent backup. If a backup is not available, go to Step 5.
5. Reinstall MMR Setup and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.
6. Double-click the MMR Setup icon to start MMR Setup.

The site cannot be prepared to update in the database

The database files may be corrupted.

Action

1. Click Cancel to terminate MMR Setup without saving any changes.
2. Run MMR Setup again and check the configuration; then, repeat the desired operation one step at a time. For example, delete all sites that need to be deleted and close MMR Setup. Then, run MMR Setup again and add all sites required.
3. If the error persists, double-click the MMR Reports icon and on the Maintenance menu, click Repair Database. This procedure attempts to repair the damaged database files. If this attempt fails, the database is corrupt beyond repair and needs to be recreated; therefore, go to Step 4. Otherwise, go to Step 5.
4. Restore the database files from a recent backup. If a backup is not available, go to Step 5.
5. Reinstall MMR Setup and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.
6. Double-click the MMR Setup icon to start MMR Setup.

The site cannot be updated in the database

The database files may be corrupted.

Action

1. Click Cancel to terminate MMR Setup without saving any changes.
2. Run MMR Setup again and check the configuration; then, repeat the desired operation one step at a time. For example, delete all sites that need to be deleted and close MMR Setup. Then, run MMR Setup again and add all sites required.
3. If the error persists, double-click the MMR Reports icon and on the Maintenance menu, click Repair Database. This procedure attempts to repair the damaged database files. If this attempt fails, the database is corrupt beyond repair and needs to be recreated; therefore, go to Step 4. Otherwise, go to Step 5.
4. Restore the database files from a recent backup. If a backup is not available, go to Step 5.
5. Reinstall MMR Setup and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.
6. Double-click the MMR Setup icon to start MMR Setup.

Critical Errors

Critical errors flag problems when downloading OM data from Meridian Mail. The MMR Communications program continues to run normally even when there are critical errors. However, you should troubleshoot critical errors, especially ones that indicate a download failure, as soon as possible since some data on Meridian Mail has a lifetime of two days. For example, on a Monday, MMR can download Saturday's and Sunday's data, but it cannot download all of Friday's data because some will have been deleted.

MMR Communications shows critical errors in a Critical Errors list box (in the Meridian Mail Reporter - Communications window) and logs them into the log file. You can access context-sensitive help for an error by selecting it and clicking the Help button.

To troubleshoot a critical error

1. Access the log file to get information about the context in which the error occurred, and, on the View menu, click Log.The log file shows a history of events and errors as well as the date and time at which an error/event occurred.
2. Look at the events and errors which occurred before the error that you are troubleshooting to see if you can determine the possible cause of the error.
3. Get online help on the error. Online help provides you with information about possible causes of errors and actions you can take to fix the problem. To access online help, click Help in the Error window.

Critical Error Messages

Bad formats in conversion template file: x

File x contains bad data and the corresponding download failed.

The following causes explain why the error possibly occurred:

- The file is corrupt.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Use File Manager or Explorer and search if the specified file exists. If it does, go to Step 4. Otherwise, go to Step 2.

2. Terminate MMR Communications and MMR Reports.

3. Reinstall MMR and make sure the Program files & password option button is selected in the Overwrite screen.

4 Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.

5. Perform an Immediate Download to get current data from Meridian Mail.

Bad or incomplete data in OM binary file: x

The following causes explain why the error possibly occurred:

- An incorrect version of Meridian Mail has been selected in MMR Setup.
- Bad data has been received from Meridian Mail.
- File *x* is corrupt.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the file.

2. Terminate MMR Communications and MMR Reports.

3. Run MMR Setup and check if the Meridian Mail version is correct.

4. Restart MMR Communications and MMR Reports, then perform an Immediate Download to get current data from Meridian Mail.

Cannot connect to x

The connection test to site x failed.

Action

- Check the preceding error in the log to determine the cause of the failure; then, refer to the appropriate error message for action.

Cannot open conversion template file: x

File x cannot be opened and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Another application is locking the file.
- The file has been inadvertently deleted
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the file.
2. Use File Manager or Explorer and search if the specified file exists. If it does, go to Step 5. Otherwise, go to Step 3.
3. Terminate MMR Communications and MMR Reports.
4. Reinstall MMR and make sure the Program files & password option button is selected in the Overwrite screen.
5. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.
6. Perform an Immediate Download to get current data from Meridian Mail.

Cannot open conversion output file: x

File x cannot be opened and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Your hard drive does not have enough free space.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Use File Manager or Explorer to delete several files which are no longer needed to free up space on the hard drive.
2. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.

3. Perform an Immediate Download to get current data from Meridian Mail.

Cannot open log file

The log file \REPORTER\STATUS.LOG cannot be opened.

Action

1. Make sure no other application is accessing the log file; then, try to view the log file. (In the Meridian Mail Reporter - Communications window, on the View menu, click Log.)
2. If the error persists, the log file may be corrupt. If this is the case, terminate MMR Communications; then, use File Manager or Explorer to delete the log file.

   Important: Do not delete the log file while MMR Communications is running.

3. Restart MMR Communications.

Cannot open OM binary file x

File x cannot be opened and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Another application is locking this file.
- There is not enough free space on your hard drive.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the file.
2. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.
3. Perform an Immediate Download to get current data from Meridian Mail.

Cannot perform the upgrade for an MM8 system. Please run MMR Setup and upgrade to MM10 before running the installation program again.

Appears if you attempt to run MMR Upgrade on MMR Release 1.0 or 1.01, and MMR Setup indicates that a Meridian Mail system is running Release 8.

Action

1. Run MMR Setup for MMR Release 1.0 or 1.01.
2. Select the Single Site MM10 option button.
3. In the OM Password column of the Meridian Mail Systems table, type the OM download password.
4. Click OK to save changes and to terminate MMR Setup.
5. Rerun the installation program.
6. If you upgrade to Meridian Mail Release 11 with MMR Release 2.0, rerun MMR Setup after installation completes and type 11 in the Release column of the Meridian Mail Systems table.

Cannot purge the OM database

Appears only for Windows 3.x/NT and if the vshare.386 share driver does not exist. This error can occur while attempting to purge large tables. This error also may appear because the vshare.386 driver is an older version.

Action

- Obtain the latest copy of vshare.386 from Microsoft's Bulletin Board System (BBS).

Cannot read conversion template file x

File *x* cannot be read and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Another application is locking the file.
- The file is corrupt.

- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the file.
2. Use File Manager or Explorer and search if the specified file exists. If it does, go to Step 5; otherwise, go to Step 3.
3. Terminate MMR Communications and MMR Reports.
4. Reinstall MMR and make sure the Program files & password option button is selected in the Overwrite screen.
5. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.
6. Perform an Immediate Download to get current data from Meridian Mail.

Cannot read from log file

The log file \REPORTER\STATUS.LOG cannot be read.

Action

1. Make sure no other application is accessing the log file; then, try to view the log file. (In the Meridian Mail Reporter - Communications window, on the View menu, click Log.)
2. If the error persists, the log file may be corrupt. If this is the case, terminate MMR Communications; then, use File Manager or Explorer to delete the log file.

   Important: Do not delete the log file while MMR Communications is running.

3. Restart MMR Communications.

Cannot read from MMR Database

The MMR system database cannot be accessed.

Action

1. Click OK to terminate MMR Communications.

2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.
4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.
5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

Cannot read OM binary file x

File x cannot be read and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Another application is locking the file.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the file.
2. Perform an Immediate Download to get current data from Meridian Mail.

Cannot run MMR Loader, shutdown process delayed for 1 day

Appears if the mmrl.exe file does not appear in the \REPORTER directory or if the file is corrupt. As well, there may not be enough memory to run MMR Loader (mmrl.exe).

Action

1. Use File Manager or Explorer to search for mmrl.exe.
2. If the file is found in another directory, move the file into the \REPORTER directory and go to Step 4.
   or
   If the file is found in the \REPORTER directory, go to Step 4.
   or
   If the file is not found, go to Step 3.
3. Reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
4. Restart Windows, which automatically restarts MMR Communications.

Cannot run MMR Reports

The following causes explain why the error possibly occurred:

- The PC is running out of memory, or memory has become too fragmented.
- The MMR Reports program is corrupt or has been inadvertently deleted.

Action

1. Double-click the MMR Reports icon to start MMR Reports. If an out of memory error message displays, go to Step 2; if a program or DLL error message displays, go to Step 4.
2. Terminate all applications, then restart Windows, which automatically restarts MMR Communications.
3. Double-click the MMR Reports icon to start MMR Reports. If this fails, go to Step 4.
4. Terminate MMR Communications.
5. Reinstall MMR and make sure the Program files & password option button is selected in the Overwrite screen.
6. Restart MMR Communications and MMR Reports; then, perform an Immediate Download to get current data from Meridian Mail.

Cannot run the conversion program, not enough memory

Appears if there is not enough memory to run the conversion program.

Action

- Restart Windows, which automatically restarts MMR Communications.

Cannot update download schedule for x. Database error

The download schedule for site x cannot be updated since the MMR system database cannot be accessed.

Action

1. Click OK to terminate MMR Setup.
2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.
4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.
5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

Cannot write to conversion output file x

File x cannot be updated and the corresponding download failed.

The following causes explain why the error possibly occurred:

- There is not enough free space on your hard drive.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a

file/disk repair utility.

Action

1. Use File Manager or Explorer to delete several files which are no longer needed to free up space on the hard drive.
2. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.
3. Perform an Immediate Download to get current data from Meridian Mail.

Cannot write to log file

The log file \REPORTER\STATUS.LOG cannot be updated.

Action

1. Make sure no other application is accessing the log file; then, try to view the log file. (In the Meridian Mail Reporter - Communications window, on the View menu, click Log.)
2. If the error persists, the log file may be corrupt. If this is the case, terminate MMR Communications; then, use File Manager or Explorer to delete the log file.

   Important: Do not delete the log file while MMR Communications is running.
3. Restart MMR Communications.

Cannot write to OM binary file x

File x cannot be updated and the corresponding download failed.

The following causes explain why the error possibly occurred:

- Another application is locking the file.
- The file is corrupt.
- The hard drive contains bad sectors, or the file system needs to be repaired, or both. If this is the case, refer to the appropriate documentation about running a file/disk repair utility.

Action

1. Make sure no other application is accessing the log file.

2. Use File Manager or Explorer to delete all files in the directory specified by the error message: \REPORTER\MMSITE\SITE*nn*.
3. Perform an Immediate Download to get current data from Meridian Mail.

COMX general I/O error

Usually this error triggers if another application is locking the specified I/O port which uses a communication driver different than the one used by MMR Communications (see also "*The requested COM port is not available for Greenleaf, because a requested hardware interrupt is used by Windows*").

Action

1. Close MMR Communications.
2. Close the application which is using the specified I/O port.
3. Restart MMR Communications.
4. If the error caused a download to fail, perform an Immediate Download.
5. If the error persists, terminate all applications; then, restart Windows which automatically restarts MMR Communications.
6. Perform an Immediate Download to get current data from Meridian Mail.

> ***Important:*** Make sure no other applications are running during subsequent scheduled downloads to avoid further errors of this kind.

COMX I/O error: cannot set port

The I/O port cannot be initialized since several parameters in the MMR.INI initialization file are incorrect. The file may be corrupted.

Action

1. Terminate MMR Communications.
2. Reinstall MMR and make sure the Program files & password option button is selected in the Overwrite screen.
3. Restart MMR Communications.
4. If the error caused a download to fail, perform an Immediate Download to get current data from Meridian Mail.

COMX I/O error: cannot write

The port buffer is full and no more characters can be sent.

Action

1. If the error caused a download to fail, perform an Immediate Download to get current data from Meridian Mail.
2. If the error persists, terminate all applications; then, restart Windows which automatically restarts MMR Communications.
3. Perform an Immediate Download to get current data from Meridian Mail.

COMX I/O error: no such port

The I/O port defined in MMR Setup is not present in your PC.

Action

1. Terminate MMR Communications and MMR Reports.
2. If you do not know which I/O ports are present in your PC, go to Step 3; otherwise, go to Step 7.
3. Open an MS-DOS session from the Main group in Program Manager.
4. Type **MSD** and press Enter at the DOS prompt. This command launches Microsoft Diagnostics.
5. Follow the instructions on the screen to display a list of all I/O ports present in your PC.
6. Exit Microsoft Diagnostics. Type **EXIT** and press Enter at the DOS prompt to terminate the MS-DOS session.
7. Start MMR Setup and select the correct I/O ports for connection to Meridian Mail.
8. Click OK to save the changes and terminate MMR Setup.
9. Restart MMR Communications.
10. If the error caused a download to fail, perform an Immediate Download to get current data from Meridian Mail.

COMX I/O error: port in use

The specified I/O port is being used by another application.

Action

1. Close MMR Communications.
2. Close the application that is using the specified I/O port.
3. Restart MMR Communications.
4. If the error caused a download to fail, perform an Immediate Download to get current data from Meridian Mail.

> ***Important**:* Make sure no other applications are running during subsequent scheduled downloads to avoid further errors of this kind.

Connection to site x failed, cannot read from MMR database

The connection to site x cannot be tested since the MMR system database cannot be accessed.

Action

1. Click OK to terminate MMR Setup.
2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.
4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.
5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

Database error: cannot copy table

The following causes explain why the error possibly occurred:

- The PC does not have enough memory.
- The database is corrupt or locked.

Action

1. Restore a backup of the database directory.
2. Make sure no other applications are running and restart Windows.
3. Retry the database query.

Database error: cannot update

The following causes explain why the error possibly occurred:

- The PC does not have enough memory.
- The database is corrupt or locked.

Action

1. Restore a backup of the database directory.
2. Make sure no other applications are running and restart Windows.
3. Retry the database query.

Disk full (x KB needed), the download has been aborted

The hard drive does not have enough free space (x) to contain all data downloaded from Meridian Mail.

Action

1. Use File Manager or Explorer to delete files which are no longer needed to free up the amount (x) of space required.
2. Perform an Immediate Download to get current data from Meridian Mail.

Disk full (x KB needed), cannot run Reports/Alerts

MMR Reports needs some free space on the hard drive to create temporary work files when generating reports. The hard drive has less space than the amount (x) required.

Action

1. Use File Manager or Explorer to delete files which are no longer needed to free up the amount (x) of space required.
2. Generate manually all reports scheduled to print after the first occurrence of the error message.

Download from site x failed

The download from site x failed.

Action

- Check the preceding error in the log to determine the cause of failure; then, refer to the appropriate error message for action.

Download from x missed for y days

The download from site x has been missed for y days due to MMR Communications not running at the time when the download was scheduled.

MMR Communications automatically updates the schedule for the next download.

Action

- Perform an Immediate Download to get current data from Meridian Mail for an interval large enough to cover the lost period.

Download will be aborted because Meridian Mail returns 0 byte for the DIRECTORY file

MMR cannot download data because the directory file on Meridian Mail is missing.

Action

1. Check the SEER file and resolve the problem on Meridian Mail.

2. After fixing the problem with Meridian Mail, perform an Immediate Download to get current data from Meridian Mail.

Error window full

The Critical Errors list box in the Meridian Mail Reporter - Communications window cannot display any more messages because it has reached its capacity of 100 messages. However, all critical error messages are still logged in to the log file.

Action

- Close the list box so that new incoming errors display.

Invalid Home directory entry in MMR.INI

Appears if the MMR.INI file does not contain the correct path for the Reporter directory.

Action

1. Use Notepad and open the MMR.INI file.
2. Make sure the entry "Home=<disk>:\REPORTER" in section "[MMR]" exists and <disk> is the disk drive where MMR is currently installed.
3. Make sure that another application is not locking the MMR.INI file.
4. Run the installation program again.

Link error: bad version

There is a problem with Meridian Mail since it runs an unsupported version of the File Transfer protocol.

Action

1. Check the SEER file and resolve the problem at the Meridian Mail level.
2. After fixing the problem on Meridian Mail, perform an Immediate Download to get current data from Meridian Mail.

Link error: connection to Meridian Mail lost

This error can only occur when an active connection exists between MMR Communications and Meridian Mail as indicated by "Status: Connected" in the Meridian Mail Reporter - Communications window.

The following causes explain why the error possibly occurred:

- The serial cable between the PC and Meridian Mail (direct connection) or the modem (modem connection) is disconnected.
- A direct connection exists with Meridian Mail, and Meridian Mail was rebooted.

For all configurations the following consequence applies:

- Since an active connection between MMR Communications and Meridian Mail exists only during a download, this error indicates that the download failed.

Action

1. Check and, if necessary, reconnect all cables. If you successfully reconnect the link, you can ignore all subsequent messages.
2. If Meridian Mail was rebooted, wait until the system is up and running again.
3. Perform an Immediate Download to get current data from Meridian Mail.

Link error: error signal

This error may occur if another application is using up too much CPU time, causing MMR Communications to time out and the download to fail.

This error may also occur if MMR Reports is generating a long report.

> ***Important:*** Try to avoid running other applications while a download is in progress, especially if you are using a PC running with minimum. Also, try to avoid scheduling or generating reports in MMR Reports during a download.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Link error: 'File Transfer' mode failure

MMR Communications could not establish the File Transfer protocol with Meridian Mail just before a download, when MMRC attempted to switch to File Transfer mode.

Action

1. Check if Meridian Mail is running.
2. Check if Meridian Mail has the AdminPlus feature enabled.
3. Check if the cable is connected to the proper port on Meridian Mail.
4. Check if the correct serial cable is being used.
5. Make sure Meridian Mail and its modem (for a modem connection) or the PC (for a direct connection) use the same baud rate.
6. If the error occurred just before a download and the download failed, perform an Immediate Download to get current data from Meridian Mail.

Link error: link timeout

If this error occurs at the beginning of a download, the PC may not be connected to the AdminPlus port.

If this error occurs during a download, it is because another application is using up too much CPU time, causing MMR Communications to time out and the download to fail.

This error may occur if MMR Reports is generating a long report.

> ***Important:*** Try to avoid running other applications while a download is in progress, especially if you are using a lower-end PC. Also, try to avoid scheduling or generating reports in MMR Reports during a download.

As well, a problem on Meridian Mail may prevent it from responding to requests from MMR.

Action

1. Check the SEER file and resolve the problem at the Meridian Mail level.
2. If this error occurs at the beginning of a download, check that the PC is connected to the AdminPlus port.
3. Perform an Immediate Download to get current data from Meridian Mail.

Link error: lost sync

This error may occur if another application is using up too much CPU time, causing MMR Communications to time out and the download to fail.

This error may occur if a long report is being generated by MMR Reports.

> ***Important:*** Try to avoid running other applications while a download is in progress, especially if you are using a lower-end PC. Also, try to avoid scheduling or generating reports in MMR Reports during a download.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Link error: system error

Another application is using up too much CPU time, causing MMR Communications to timeout and the download to fail.

This error may occur if a long report is being generated by MMR Reports.

> ***Important:*** Try to avoid running other applications while a download is in progress, especially if you are using a lower end PC. Also, try to avoid scheduling and/or generating reports in MMR Reports during a download.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Link error: too many retries

If another application is using up too much CPU time, it may cause MMR Communications to time out and the download to fail.

This error may occur if a long report is being generated by MMR Reports.

> ***Important:*** Try to avoid running other applications while a download is in progress, especially if you are using a lower-end PC. Also, try to avoid scheduling or generating reports in MMR Reports during a download.

As well, a problem on Meridian Mail may prevent it from responding to requests from MMR.

Action

1. Check the SEER file and resolve the problem at the Meridian Mail level.
2. Perform an Immediate Download to get current data from Meridian Mail.

MMR Loader CRITICAL: Cannot terminate MMR Reports, shutting down MMR Loader

Appears if you customize the Alert or Report Palettes, or the Download Schedule in MMR Reports, and you do not save changes. MMR Reports remains active. Therefore, MMR Loader cannot terminate MMR Reports and then run.

Action

- Save all changes after customizing MMR Reports.

Note: No harm is done if MMR Loader does not run at this time. As well, the download schedule is not affected. This error indicates that MMR Reports did not terminate and notifies you about the chance of memory fragmentation.

Meridian Mail error: bad download password

The Meridian Mail download password is incorrect.

Action

1. In MMR Setup, in the Release column of the Meridian Mail Systems table, check that the proper release number appears.
2. Ensure that the download passwords for Meridian Mail and MMR are the same. The Meridian Mail download password is set through MMI by selecting the General Options command from the System Admin Main Menu. Then, select the Change AdminPlus Download Password command. The MMR download password is set through the OM Password column in the MMR Setup window.
3. Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: bad end date x

An incorrect system date was sent to Meridian Mail in this file; x is the error code returned by Meridian Mail. Meridian Mail Customer Support may use this code when troubleshooting the problem.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: bad file size x

Meridian Mail received a wrong size file in response to a download file request; x is the size of the file returned by Meridian Mail.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: bad start date x

An incorrect system date was sent to Meridian Mail in this file; x is the error code returned by Meridian Mail and may be used by Meridian Mail Customer Support when troubleshooting the problem.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: cannot access x

Meridian Mail cannot access one of the MMR files for this download; x is the error code returned by Meridian Mail. Meridian Mail Customer Support may use this code when troubleshooting the problem. Usually, the file name is logged in the message above the error message (for example, "Downloading File: SEER").

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: download password not set

The Meridian Mail download password is not specified.

Action

1. Set the Meridian Mail download password through MMI by selecting the ‘General Options’ command from the ‘System Admin Main Menu’. Then, select the Change AdminPlus Download Password command. This password must be the same as the OM Password, specified in the Meridian Mail Systems table of MMR Setup.
2. Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: task in progress x

Meridian Mail is currently busy; x is the error code returned by Meridian Mail and may be used by Meridian Mail Customer Support when troubleshooting the problem.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail error: task not in progress x

Meridian Mail is unable to perform this download; x is the error code returned by Meridian Mail and may be used by Meridian Mail Customer Support when troubleshooting the problem.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Meridian Mail Reporter Communications is running. You cannot run Meridian Mail Reporter Upgrade

Appears if you attempt to run MMR Upgrade while MMR Communications is running.

Action

1. Terminate MMR Communications.
2. Rerun MMR Upgrade.

Meridian Mail Reporter Reports is currently running. You cannot run Meridian Mail Reporter Upgrade

Appears if you attempt to run MMR Upgrade while MMR Reports is running.

Action

1. Terminate MMR Reports.
2. Rerun MMR Upgrade.

Meridian Mail Reporter Setup is currently running. You cannot run Meridian Mail Reporter Upgrade

Appears if you attempt to run MMR Upgrade while MMR Setup is running.

Action

1. Terminate MMR Setup.
2. Rerun MMR Upgrade.

Meridian Mail System Error, code = x

There is a problem with Meridian Mail since it returns the error code x during a download request.

Action

1. Check the SEER file and resolve the problem on Meridian Mail.
2. After the problem has been fixed on Meridian Mail, perform an Immediate Download to get current data from Meridian Mail.

Modem error, unknown response

The modem connected to the PC returned a response that MMR Communications cannot understand.

There are incorrect strings in one or more of the MMR.INI file's following sections: FAILURE, COMPRESSION, and PROTOCOL.

Action

1. Reinstall the programs from the installation diskettes and make sure the Program files & password option button is selected in the Overwrite screen.

2. Reboot the PC.

3. Restart Windows which automatically restarts MMR.

4. Perform an Immediate Download to get the current data from Meridian Mail.

Modem failed to connect, received X

An error (X) was received by the PC modem, and the modem failed to connect with the Meridian Mail modem. The error (X) will be one of the following: ERROR, NO CARRIER, NO ANSWER, NO DIAL TONE, or BUSY.

Once the problem is solved, do an Immediate Download to get the current data from Meridian Mail.

Action

The action that you take depends on the type of error which was received.

If the error was	Then
BUSY	before doing an Immediate Download, dial the site's modem number to make sure the line is not busy.
NO ANSWER	the remote modem failed to go off-hook.
NO CARRIER	the remote modem disconnected.
NO DIAL TONE	the modem is not connected to the phone line.
ERROR	this is a modem error. Check the specific modem documentation.

Perform an Immediate Download to get the current data from Meridian Mail.

Modem failed to connect, timeout

The modem did not connect to the Meridian Mail site within the 60-second timeout period. The connection attempt was aborted.

Action

Perform the following steps. Stop this procedure when the problem is resolved.

1. Check the cable between the modem and the phone jack to make sure it is connected to the proper phone line.
2. Check the phone line by dialing the modem number of the Meridian Mail site. Listen for modem tones.
3. Check your setup. The Dial number for the Meridian Mail site may have been entered incorrectly in the Modem Commands dialog box. Make sure you have the right number (DN) for the site.
4. Call the administrator at the Meridian Mail site to inquire about the receiving modem. There may be a problem with the receiving modem.

   The following potential problems are:

   - The modem may not be programmed to go into answer mode.
   - The modem may wait too long to pick up a call. For example, if programmed to pick up after the 15th ring, this may take longer than 60 seconds, thus exceeding the timeout threshold.
   - The receiving modem is not compatible with the sending modem or is incorrectly programmed.
5. Perform an Immediate Download to get current data from Meridian Mail.

Modem failed to disconnect

The modem connected to the PC did not disconnect when the communication between the modem and the Meridian Mail site was complete.

The Hangup Prefix or the Hangup Suffix, or both, that are configured in the Modem Commands dialog box may be wrong for your modem type.

Action

Follow this procedure to verify (and possibly change) the current setup configuration.

1. In your MMR or modem documentation, look up the correct Hangup Prefix and Hangup Suffix for your modem type. If your modem type is not listed, your modem may be unsupported.

2. Terminate MMR Communications and MMR Reports if they are running.
3. Double-click the MMR Setup icon to run MMR Setup, and open the Meridian Mail Reporter - Setup window.
4. Click Modem to open the Modem Commands dialog box.
5. Check the values in the Hangup Prefix and Hangup Suffix fields.
6. If these settings are incorrect for your modem type, change the settings to those that are documented.
7. Save the new configuration.
8. Restart MMR Communications and MMR Reports.
9. Perform an Immediate Download to get current data from Meridian Mail.

Modem failed to initialize

Before attempting a connection to a Meridian Mail site, the modem must be initialized. The modem could not be initialized and the connection was not made.

Action

Perform the following steps. Stop this procedure when the problem is resolved.

1. Check the modem to see if it is on.
2. Check the cable to make sure it is properly connected to the modem and the PC.
3. Terminate MMR Communications and MMR Reports, then start MMR Setup by double-clicking on the MMR Setup icon.
4. Check your configuration in the Meridian Mail Reporter - Setup window. If you do not use a modem and have a direct connection to Meridian Mail, make sure that the Dial field is blank.
5. Click Modem to open the Modem Commands dialog box.
6. Check your MMR documentation or modem documentation to determine the correct initialization value for your modem, since an incorrect initialization value may have been entered in the Modem Commands dialog box in MMR Setup.
7. Click OK to save any changes, and close the Modem Commands dialog box; then, save any other changes, and close the Meridian Mail Reporter - Setup window.
8. Restart MMR Communications and MMR Reports; then, perform an Immediate Download to get current data from Meridian Mail.

9. Replace the cable. It may be defective.
10. Replace the modem.

MMRC internal failure

MMR Communications has been corrupted.

Action

1. Terminate all applications; then, restart Windows which automatically restarts MMR Communications.
2. If the error persists, reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
3. Restart MMR Communications.

OM database error: cannot scan

The following causes explain why the error possibly occurred:

- The PC does not have enough memory.
- The database is corrupt or locked.

Action

1. Restore a backup of the database directory.
2. Make sure no other applications are running and restart Windows.
3. Retry the database query.

OM database error: cannot update

The following causes explain why the error possibly occurred:

- The PC does not have enough memory.
- The database is corrupt or locked.

Action

1. Restore a backup of the database directory.

2. Make sure no other applications are running and restart Windows.

3. Retry the database query.

Shutdown set after 5 days, cannot read from MMR database

Appears if there is an error in the system database.

Action

1. Terminate all MMR components.

2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.

3. If the file exists, start MMR Reports to test only the system database and to respond to any error messages.
   or
   If the file is missing, restore all database files from a backup; then, restart MMR.
   or
   If no backup is available, go to Step 5.

4. If an error message appears, go to Step 5.

5. Reinstall MMR, and make sure the Database & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

System database error: cannot scan

The following causes explain why the error possibly occurred:

- The PC does not have enough memory.
- The database is corrupt or locked.

Action

1. Restore a backup of the database directory.

2. Make sure no other applications are running and restart Windows.

3. Retry the database query.

The requested COM port is not available for Greenleaf, because a requested hardware interrupt is used by Windows

The specified I/O port is locked by another application which uses a communication driver different than the one used by MMR Communications (See also "*COMX general I/O error.*").

Action

1. Press any key to continue. MMR displays: COMX general I/O error.
2. Close MMR Communications.
3. Close the application that is using the specified I/O port.
4. Restart MMR Communications.
5. If the error caused a download to fail, perform an Immediate Download to get current data from Meridian Mail.

Unknown file error during conversion

The following causes explain why the error possibly occurred:

- The PC is running out of memory.
- Memory has become too fragmented.
- The file conversion program is corrupt or has been inadvertently deleted.

Action

1. Terminate all applications; then, restart Windows which automatically restarts MMR Communications.
2. Perform an Immediate Download to get current data from Meridian Mail.
3. If the error persists, terminate MMR Communications and MMR Reports
4. Reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
5. Restart MMR Communications and MMR Reports; then, perform an Immediate Download to get current data from Meridian Mail.

Wrong packet received

The wrong command was sent from Meridian Mail. This download failed.

Action

- Perform an Immediate Download to get current data from Meridian Mail.

Fatal Error Messages

A fatal error causes MMR Communications to show a message box containing the error's message. When you click OK, the message terminates. Fatal error messages and their corresponding corrective action(s) appear below.

Cannot find system database

The MMR system database has not been properly registered with open database connectivity (ODBC).

Action

1. Terminate MMR Reports if it is running.
2. Reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
3. Restart MMR Communications.

Cannot read from MMR database: database missing

The MMR system database cannot be accessed.

Action

1. Click OK to terminate MMR Setup.
2. Verify that the following system database file exists in the \REPORTER\DATABASE directory: MMR_SYS.MDB and that the following database file exists in all the \SITEx directories of \REPORTER\DATABASE: MMR_OM.MDB.
3. If all files exist, double-click the MMR Reports icon to test only the system database and respond to any error messages. If either file is missing, restore BOTH files from a backup; then, restart MMR. If no backup is available, go to Step 6.

4. If an error message displays, go to Step 6. If no error messages display, the problem is in MMR_OM.MDB; therefore, go to Step 5.
5. In MMR Reports, on the Maintenance menu, click Repair Database. If that does not work, restore the database from a backup. If you do not have a backup, on the Maintenance menu, click Clear Database. If even that does not work, go to Step 6.
6. Reinstall MMR, and make sure the Data files & password option button is selected in the Overwrite screen. This procedure creates a new, empty database.

Cannot read the profile file: MMR.INI

The MMR initialization file (\REPORTER\MMR.INI) is corrupt or missing.

Action

1. Terminate MMR Reports if it is running.
2. Reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
3. Restart MMR Communications.

Cannot run: bad or missing device driver

An MMR device driver for serial communications is corrupt or missing.

Action

1. Terminate MMR Reports if it is running.
2. Reinstall MMR, and make sure the Program files & password option button is selected in the Overwrite screen.
3. Restart MMR Communications.

Disk full, cannot run MMR Communications! The program will now terminate. Please free some space on the hard drive, then restart MMR Communications

The hard drive does not have enough space for the temporary space required when working with the MMR database.

Action

- Use File Manager or Explorer to delete files which are no longer required to free up space. At least 250 Kbytes must be free to be able to access the database. Typically, 10 Mbytes must be free to generate a report.

Appendix A: Modem and Cable Specifications

Modems and Modem Settings

Meridian Mail Reporter currently supports four types of modems. You need to configure these modems (Hayes Optima 144, Racal-Datacom ALM3223, Ventel 9600 Plus II, and US Robotics Sportster 14 400) according to the platform— either the PC or Meridian Mail—to which they are connected.

Defining Modem Settings in MMR Setup

You must define general settings for the modem connected to the PC using MMR Setup. Click Modem in the Meridian Mail Reporter - Setup window to open the Modem Commands dialog box. The installation program supplies default values for the US Robotics Sportster 14 400 modem.

Figure A-1
Modem Commands dialog box

Figure A-1 not available.

Complete the following boxes:

Note: If you use a "compatible" modem, use the initialization string meanings provided in this Appendix to determine the initialization string you should use for your modem.

- **Dial Prefix** Enter the command string for the modem that you are using. This string will be added to the beginning of the dial-up number and is a maximum of 20 alphanumeric characters.

- **Dial Suffix** Enter the command string that will be appended to the dial-up number before dialing. The length of this string is a maximum of 20 alphanumeric characters.

- **Hangup Prefix** Enter the hangup prefix that will be added to the beginning of the hangup command sent to the modem. The length of the number is a maximum of 20 alphanumeric characters.

- **Hangup Suffix** Enter the hangup suffix that will be added to the end of the hangup command sent to the modem. The length of the number is a maximum of 20 alphanumeric characters.

- **Initialization** Enter the initialization string for the modem you are using. This string is sent to the modem during initialization.

Click OK to save the modem settings in the configuration file and to return to the Meridian Mail Reporter - Setup window. Click Cancel to close the dialog box without saving your changes. Click Help for online help about setting up your modem.

Change Settings for Modems Connected to the MMR PC

Table A-1
US Robotics Sportster 14 400 Settings

Dial Prefix	Dial Suffix	Hangup Prefix	Hangup Suffix	Initialization
ATDT		+++	ATH	AT&F1E0&H1&I0&B1&R2&A0&M0&K0

Table A-2
US Robotics Sportster 14 400 Initialization String Commands

Command	Description
&F1	reset
E0	no echo
&H1	hardware flow control, CTS
&I0	software flow control disabled
&B1	fixed serial port rate
&R2	received data to PC only RTS
&A0	ARQ result codes disabled
&M0	normal mode, error control disabled
&K0	disable data compression

Note: The US Robotics Sportster 14 400 modem requires a specific DIP switch setting. Refer to the following table for the proper DIP switch settings.

Table A-3
US Robotics Sportster 14 400 DIP Switch Settings

Switch	Setting	Description
S1	OFF	DTR must be provided for the modem to accept commands
S2	OFF	verbal result codes
S3	ON	enable result codes
S4	OFF	display keyboard commands
S5	ON	disable auto answer
S6	OFF	CD on connect; CD dropped on disconnect
S7	OFF	load Y/Y1 configuration from NVRAM
S8	ON	enable AT command recognition

Note: If you change the DIP switch settings, power the modem off, then on, to make the changes take effect.

Table A-4
Hayes Optima 144 Settings

Dial Prefix	Dial Suffix	Hangup Prefix	Hangup Suffix	Initialization
ATDT		+++	ATH	AT&FE0&D2S0=0

Table A-5
Hayes Optima 144 Initialization String Commands

Command	Description
&F	reset
E0	no echo
&D2	on DTR on-to-off transition, hang up and enter command mode
S0=0	no answering

Table A-6
Racal-Datacom ALM3223 Settings

Dial Prefix	Dial Suffix	Hangup Prefix	Hangup Suffix	Initialization
ATDT		+++	ATH	AT&FE0&D2\M1\V0S0=0

Table A-7
Racal-Datacom ALM3223 Initialization String Commands

Command	Description
&F	reset
E0	no echo
&D2	on DTR on-to-off transition, hang up and enter command mode
\M1	disable data compression
\V0	disable extended result codes
S0=0	no answering

Change Settings for Modems Connected to Meridian Mail

You must set the parameters for the modem connected to Meridian Mail before connecting the modem to MM. To set the parameters, connect the modem to a VT-220 terminal or to a PC with a terminal emulation program (for example, Microsoft Windows Terminal), and send a command string to the modem.

Note: When connecting the modem to the VT-220 terminal or PC, the serial port must use the same speed that will be used between the modem and Meridian Mail.

Once the command string has been sent to the modem, you must set the modem into Dumb Mode; that means, you must disable AT command recognition.

If you need to change the modem settings again, you must disable the Dumb Mode; otherwise, the modem will not recognize the commands. After the commands have been acknowledged by the modem, you must set the modem back to Dumb Mode.

Table A-8
US Robotics Sportster 14 400 Initialization String Commands
Initialization string: AT&F1&D0&B1Q1&C1S0=1E0&H0&R1&W0

Command	Description
AT&F1	reset
&D0	ignore DTR
&B1	fixed serial port rate
Q1	quiet mode
&C1	detect CD
S0=1	auto answer on
E0	no echo
&H0	no handshake on transmit
&R1	no handshake on receive
&W0	write to NVRAM

Table A-9
US Robotics Sportster 14 400 DIP Switch Settings

Switch	Setting	Description
S1	ON	ignore DTR
S2	OFF	verbal results code
S3	OFF	disable results code
S4	ON	no echo
S5	OFF	answer on first ring
S6	OFF	CD on connect; CD dropped on disconnect
S7	OFF	load Y/Y1 configuration from NVRAM
S8	OFF	Dumb mode

If you change the DIP switch settings, power the modem off, then on, to effect the changes.

Note: To place the US Robotics Sportster into Dumb Mode, set DIP switch #8 to OFF.

Table A-10
Hayes Optima 144 Initialization String Commands
Initialization string: AT&F&D0Q1&C1S0=1E0&A0&K0&W0

Command	Description
AT&F	reset
&D0	ignore DTR
Q1	quiet mode
&C1	detect CD
S0=1	auto answer on
E0	no echo

Table A-10 (continued)
Hayes Optima 144 Initialization String Commands

&A0	answering modem
&K0	no handshake
&W0	write to NVRAM

Note: The modem must be set in Dumb Mode to disable AT command recognition. Refer to the *Hayes Smartmodem Optima 144 User's Guide*, pages 4-19 and 4-20, for information on placing the modem into Dumb Mode.

Table A-11
Ventel 9600 Plus II Initialization String Commands
Initialization string: AT&F*X1&C1\N0%F0\F0S0=1&D0E0Q1&W

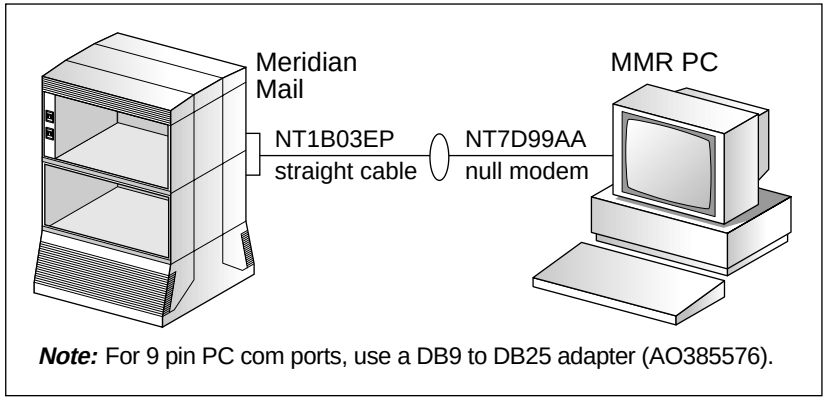
Command	Description
AT&F	reset
*X1	fixed serial port rate
&C1	detect CD
\N0	normal mode (no compression, no error detection)
%F0	disable flow control
\F0	8-bit data, no parity, 1 stop bit
S0=1	auto answer on
&D0	ignore DTR
E0	no echo
Q1	quiet mode
&W	write to NVRAM

Note: The modem must be set in Dumb Mode to disable AT command recognition. Refer to the *Ventel 9600 Plus II User's Manual*, pages 2-7, 11-2, and 11-3, for information on placing the modem into Dumb Mode.

Cable Requirements

Use one of the following three diagrams to connect a single site configuration of Meridian Mail Reporter to Meridian Mail. To connect a multisite configuration of Meridian Mail Reporter, please refer to the modem settings in this chapter along with the settings in your modem's guide.

Figure A-2
Cables for Modular Option EC systems



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For specific cabling information about your Modular Option platform, please refer to the *Meridian Mail Modular Option Installation and Maintenance Guide* (NTP 555-70x1-250). The x in the number's middle layer represents the platform.

Figure A-3
Cables for MSM systems

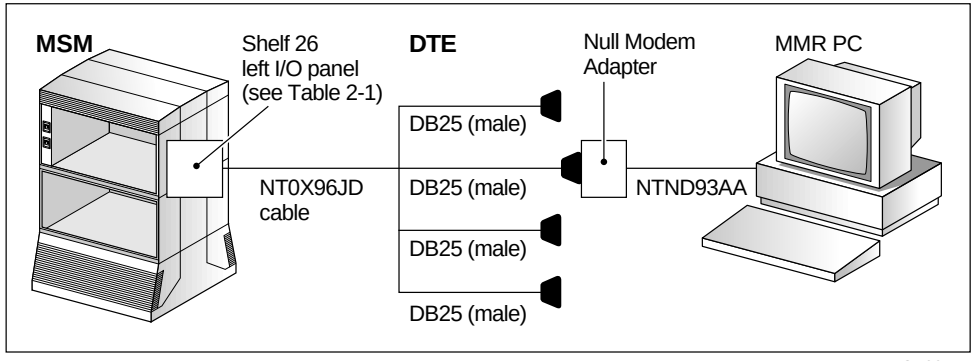

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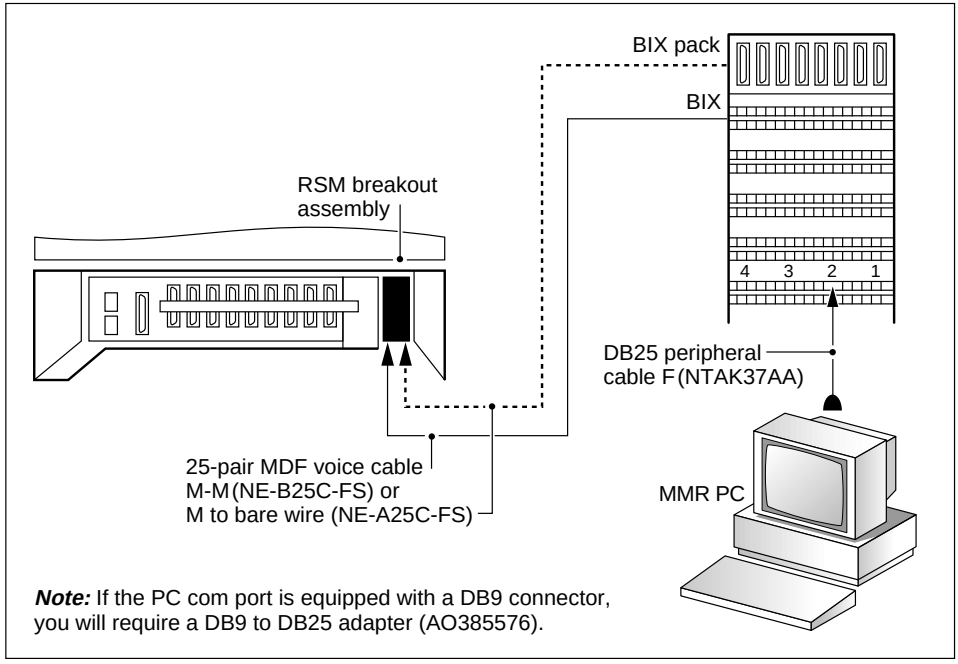
Figure A-4
Cables for Card Option systems


BIX pack
BIX
RSM breakout assembly
4 3 2 1
DB25 peripheral cable F (NTAK37AA)
25-pair MDF voice cable M-M (NE-B25C-FS) or M to bare wire (NE-A25C-FS)
MMR PC
Note: If the PC com port is equipped with a DB9 connector, you will require a DB9 to DB25 adapter (AO385576).

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